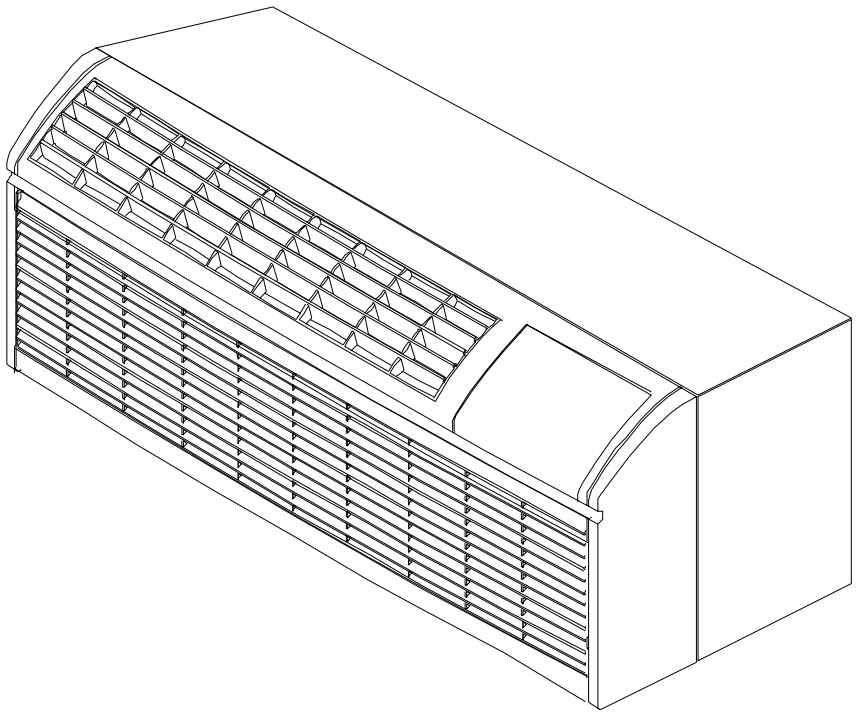
All Models and Manufacturing Numbers For Amana Units

Service Instructions

Accessories Manual for All Package Terminal Air Conditioners and Heat Pumps



Heating & Air Conditioning
Amana®
Comfort. Quality. Trust.

This manual is to be used by qualified HVAC technicians only. Amana does not assume any responsibility for property damage or personal injury for improper service procedures done by an unqualified person.

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October 2001

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When Ordering Parts

All product model and serial nameplates carry an additional number called the manufacturing number. It is possible to have one or more like products with the same model number, but that a portion of the parts would not be interchangeable.

The manufacturing number has been added to the product to assist the service department in identifying any given product.

It is extremely important when looking up service repair parts in the parts list, or when requesting service information, that the manufacturing, model and serial numbers be used to properly identify the product.

Important Information

Pride and workmanship go into every product to provide our customers with quality products. It is possible, however, that during its lifetime a product may require service. Products should be serviced only by a qualified service technician who is familiar with the safety procedures required in the repair and who is equipped with the proper tools, parts, testing instruments and the appropriate service manual. **REVIEW ALL SERVICE INFORMATION IN THE APPROPRIATE SERVICE MANUAL BEFORE BEGINNING REPAIRS.**

IMPORTANT NOTICES FOR CONSUMERS AND SERVICERS

WARNING

IF REPAIRS ARE ATTEMPTED BY UNQUALIFIED PERSONS, DANGEROUS CONDITIONS (SUCH AS EXPOSURE TO ELECTRICAL SHOCK) MAY RESULT. THIS MAY CAUSE SERIOUS INJURY OR DEATH.

CAUTION

AMANA WILL NOT BE RESPONSIBLE FOR ANY INJURY OR PROPERTY DAMAGE ARISING FROM IMPROPER SERVICE OR SERVICE PROCEDURES. IF YOU PERFORM SERVICE ON YOUR OWN PRODUCT, YOU ASSUME RESPONSIBILITY FOR ANY PERSONAL INJURY OR PROPERTY DAMAGE WHICH MAY RESULT.

To locate an authorized servicer, please consult your telephone book or the dealer from whom you purchased this product. For further assistance, please contact:

CONSUMER AFFAIRS DEPT. **OR**
AMANA REFRIGERATION, INC. **CALL** 1-800-843-0304
AMANA, IOWA 52204

If outside the United States contact:

AMANA REFRIGERATION, INC.
ATTN: HEATING AND AIR CONDITIONING DIVISION
1810 WILSON PARKWAY
FAYETTEVILLE, TN 37334 USA
FAX: 615-438-2213

RECOGNIZE SAFETY SYMBOLS, WORDS AND LABELS

DANGER

DANGER - Immediate hazards which **WILL** result in severe personal injury or death.

WARNING

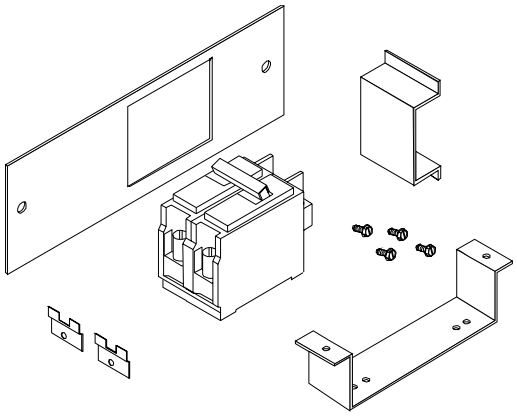
WARNING - Hazards or unsafe practices which **COULD** result in severe personal injury or death.

CAUTION

CAUTION - Hazards or unsafe practices which **COULD** result in minor personal injury or product or property damage.

Accessory Installations

Circut Breaker Kit



⚠ WARNING

Disconnect electrical power source before wiring the subbase. Failure to do so may result in injury or death from electrical shock. The unit "OFF" switch does not disconnect all power to the unit.

⚠ CAUTION

Use copper conductors only for electrical connections. The use of other types of conductors may result in galvanic corrosion, overheating and resultant equipment failure.

⚠ WARNING

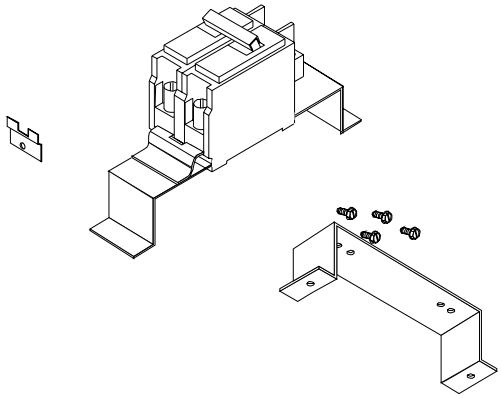
All wiring must comply with applicable local and national codes. Type and location of fused disconnect switch(es) must comply with all applicable codes.

Description

The circuit breaker kit provides POWER ON/OFF and current overprotection function at the unit. The circuit breaker kit contains the appropriate circuit breaker, replacement access cover for the high voltage section of the subbase, mounting bracket and clips, and required hardware. Select circuit breaker kits according to unit amperage.

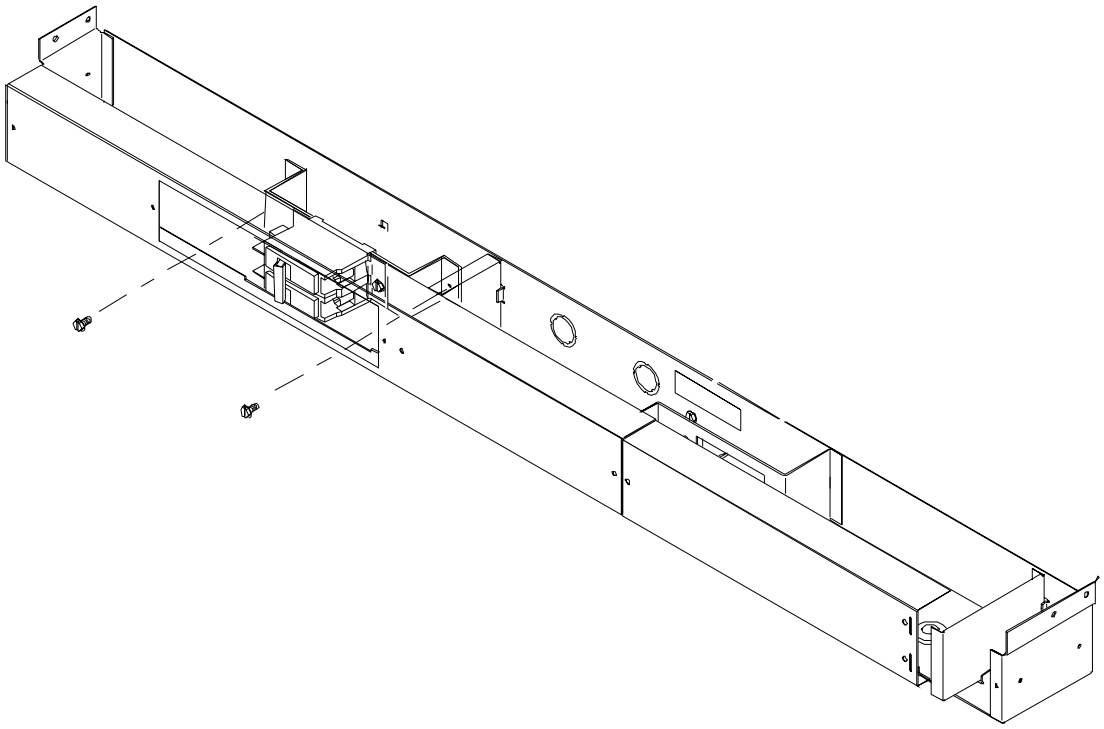
Installation

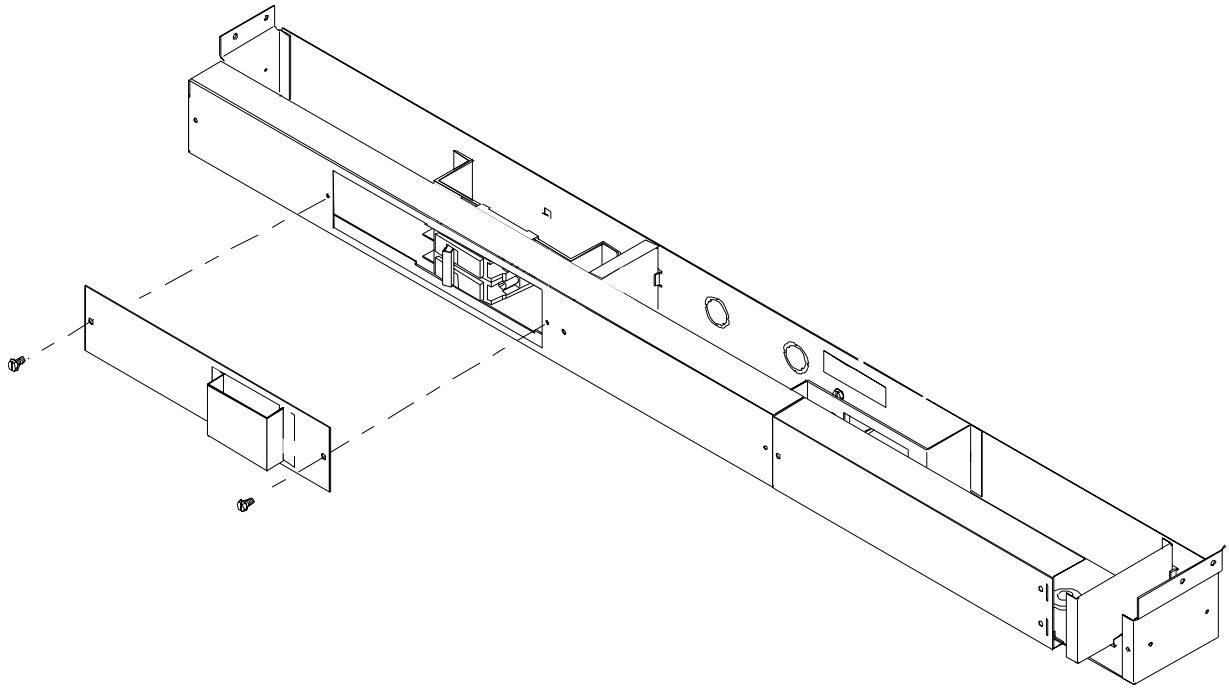
1. Check circuit breaker for manufacturers name. Select mounting holes in mounting bracket to match part as indicated in the following figure (GE and Westinghouse use outer holes). Secure one of the two small mounting clips to the mounting bracket. Do not fully tighten the mounting screw at this time.



2. Position the circuit breaker on the mounting bracket so that the locking tabs on the small clip (installed in Step 1) hold the circuit breaker on the mounting bracket.
3. Install the second small clip on the mounting bracket, locking the circuit breaker on the mounting bracket. Tighten both mounting screws securely.
4. Disconnect electrical power to the unit (if already wired).
5. Remove access cover from subbase.
6. Position the entire circuit breaker assembly in the subbase as shown in Figure 2. Using the two screws provided, secure the assembly to the subbase back wall in the subbase high voltage section. The large compression connections should be on the left ("ON" to the left, "OFF" to the right).
7. Connect the line voltage to the large compression terminals (left of breaker). Connect subbase wiring to the smaller compression connections (right of breaker). If a ground lug is provided, ground the lug to the unit.
8. Install the circuit breaker guard and the replacement access cover for the high voltage section. Install the assembly over the circuit breaker handle using the two screws removed from the original access cover.

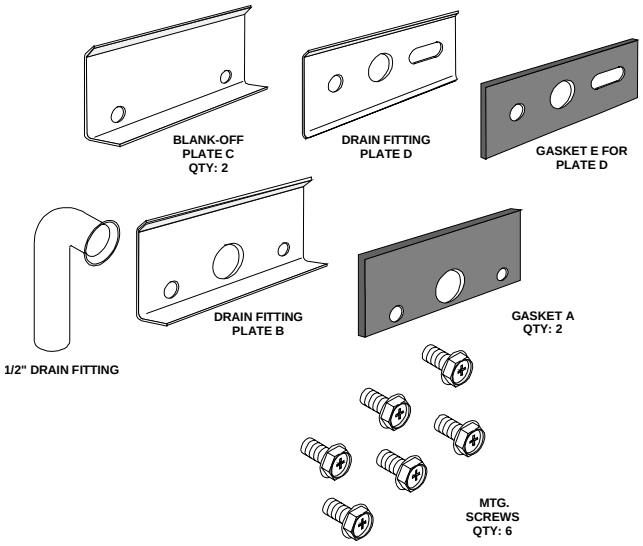
Accessory Installations





Accessory Installations

Condensate Drain Kit


BLANK-OFF PLATE C QTY: 2
DRAIN FITTING PLATE D
GASKET E FOR PLATE D
DRAIN FITTING PLATE B
GASKET A QTY: 2
1/2" DRAIN FITTING
MTG. SCREWS QTY: 6

Description

This kit is used to control condensate from the unit. Condensate water drains from the chassis into the sleeve during normal heat pump operation and during times of high humidity when the unit is in cooling operation. The drain kit allows the condensate from the outdoor and indoor coils to be routed to a suitable area. It can be installed for either outdoor or indoor use. For outdoor use, the condensate can be drained from either the right- or left-hand side of the wall sleeve. Local codes will determine the proper condensate disposal. For indoor use, the drain components must be installed on the bottom of the wall sleeve and connected to a drain system inside the building.

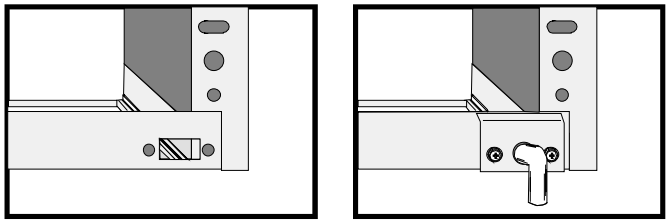
NOTE: This drain kit serves only as a link between the unit and field-supplied condensate drain system. Installing the kit without connecting it to a drainage system will result in inadequate condensate removal, possible leakage and corrosion.

ALGAECIDE: Some algaecide products may cause damage to the unit basepan or coils and should not be used. Contact your sales representative when considering the use of a commercial algaecide.

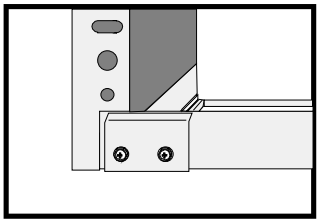
Installation for Outdoor Use

The drain components for outdoor use must be installed before the wall sleeve condenser grille.

1. Remove the rear enclosure panel and the sleeve stiffener. These items can be removed from the inside of the building.
2. Insert the 1/2” drain fitting in the opening of gasket A and plate B. Secure this assembly into the holes located on the rear of the wall sleeve using two of the Phillips mounting screws provided.



3. Place the remaining gasket A on the back of blank-off plate C and secure the assembly to the left rear of wall sleeve with the remaining Phillips mounting screws provided.



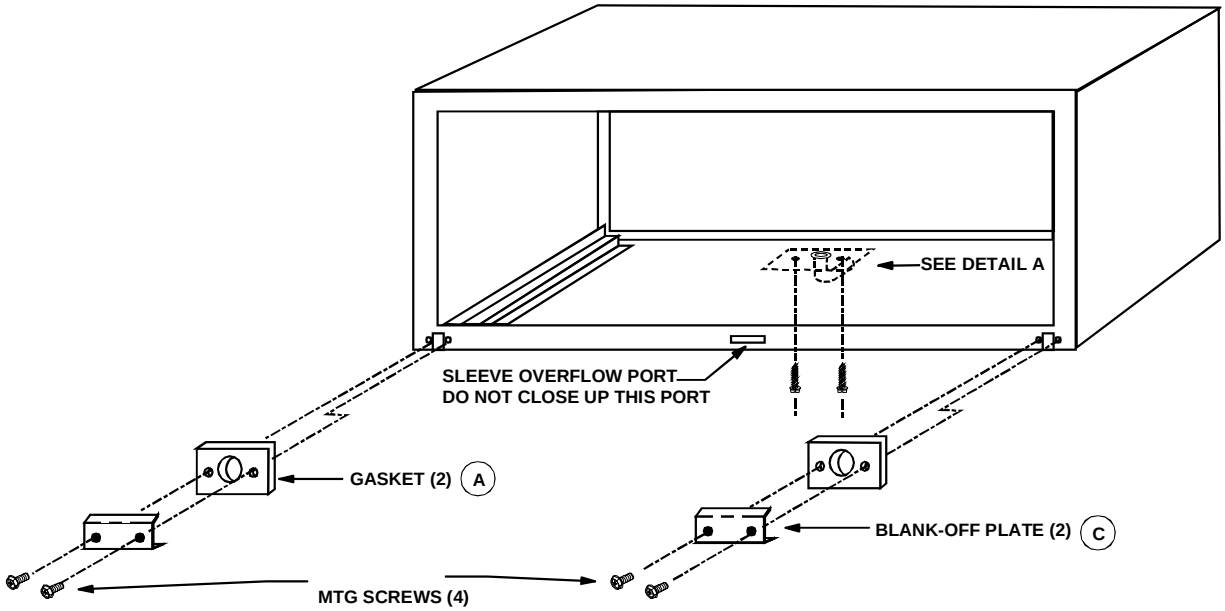
If unit chassis installed right away

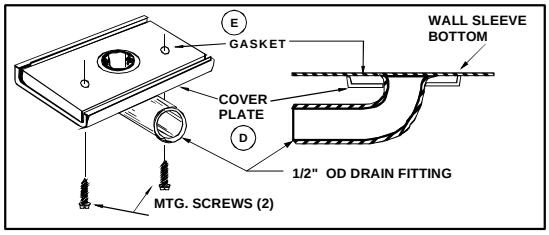
Install the grille to wall sleeve with hardware provided. See grille installation instructions.

If unit chassis is not installed right away

Replace the rear enclosure panel in the wall sleeve to protect the inside of the building from weather damage.

Accessory Installations





The components of the wall sleeve drain kit for indoor use are shown in the detail of the figure above. **These components must be installed prior to the installation of the wall sleeve.**

1. Locate an area on the wall sleeve that will be inside the room when the sleeve is installed. If a subbase is installed, locate the kit a minimum of 3 1/2” from the front flange of the wall sleeve. This clearance will provide adequate clearance for the subbase.
2. Cutout the template in Figure 5. Using this template, locate and drill the drain kit holes as close to the outside wall as possible.
3. Using detail A in Figure 4 as a guide, assemble the gasket (E), drain fitting plate (D), and 1/2” drain fitting together. Install the assembly into the drilled holes and secure using the two slotted mounting screws included in the kit. Be sure drain tube is not restricted.

   NOTE: If the drain fitting is not connected to an indoor drainage system immediately after the wall sleeve is installed; plug the hole with cork (not included) to prevent indoor water damage in case it rains
4. Install a 1/2” ID tube or hose (not included) on the drain fitting and interconnect it to the drain system inside of the building. Ensure that there are no kinks or traps in tube or hose. Kinks or traps can cause improper drainage.
5. Install the two blank-off plates C and gaskets A on the outdoor portion of the wall sleeve as shown in Figure 4. These components can be installed after the sleeve is secured in the wall opening just prior to the installation of the condenser grille and chassis.

Accessory Installations

Condensate Removal Pump

⚠ WARNING

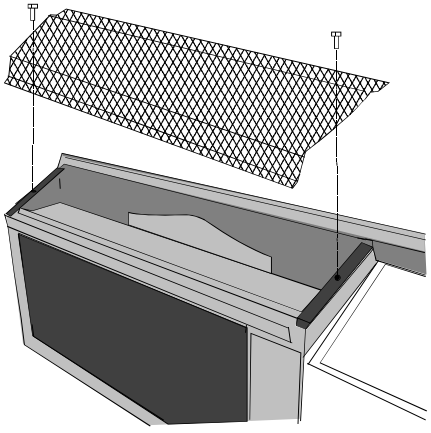
To avoid the possibility of death, pesonal injury or property damage due to electrical shock, disconnect all electrical power to the chassis before attempting to install this kit.

Description

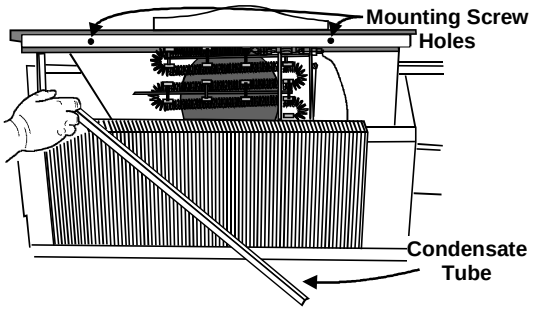
The internal condensate pump serves as an effective means for disposing of condensate generated during heat pump operation by transferring it to the indoor coil. The warm coil surface and the warm room air help in evaporation of the condensate while adding humidity to the room. As with any equipment of this type, the addition of this kit will decrease the sensible heating capacity of the unit. This kit is not intended for use in seacoast or corrosive environments.

NOTE: Under extreme high humidity conditions, the internal condensate pump may not be able to dispose of all the condensate produced, and condensate would then drip from the outside of the wall sleeve. If this condensation is unacceptable, then a drain system (including factory approved drain kit for the wall sleeve) should be installed.

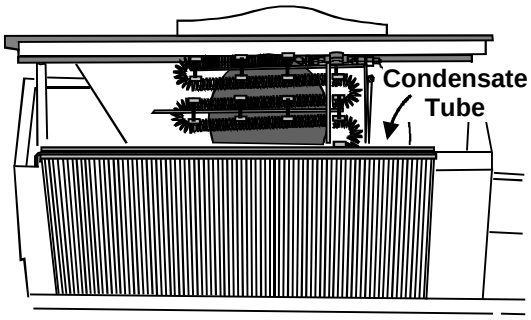
1. Remove front by rotating bottom outward and then lifting up and out from chassis.
2. Unplug and remove the PTAC chassis from the wallsleeve. Move the chassis where the front and back of the chassis can be easily accessed.
3. Remove the discharge screen by unscrewing two screws holding the screen to the blower panel. Set screen aside.



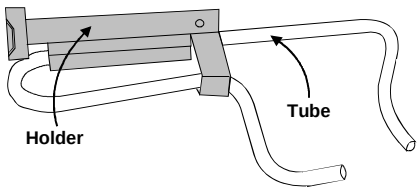
4. Lift the blower panel approximately 10 inches by unscrewing two screws holding the blower panel to the chassis and lift upward being careful not to pinch heater wires.



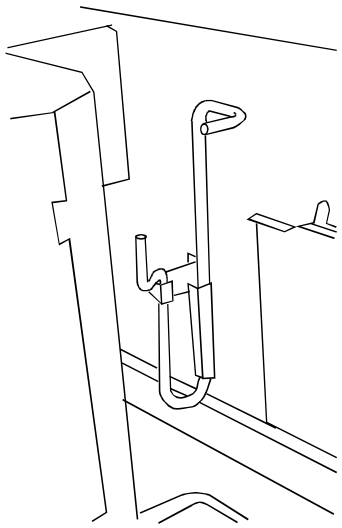
5. Using the short leg of the condensate tube push out the 1/2 inch diameter knockout on the back wall of the styrofoam scroll. The condensate tube should protrude through the partition panel by 1-3/4 inches. Rotate the condensate tube so the tube lays flat on the coil.



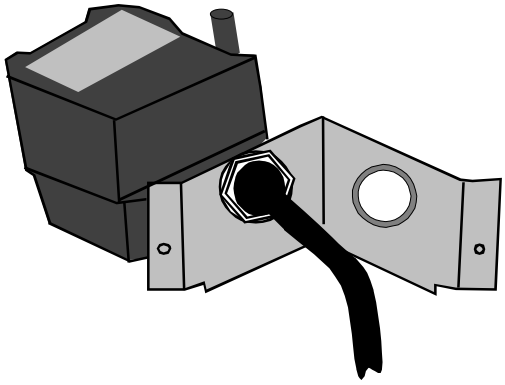
6. Orient the condensate tube on the coil so when the blower panel is lowered the condensate tube fits snugly into the raised embossment of the blower panel.
7. Make sure the holes in the condensate tube are *facing inward* toward the blower wheel.
8. Lower the blower panel over the condensate tube and screw the blower panel to the chassis with the existing screws. Replace the discharge screen and screw the screen to the blower panel with the existing screws.
9. Using the overflow tube holder and the overflow tube, hold the tube with the metal holder and screw the holder to the partition panel with the provided 1/2 inch #8 screw.



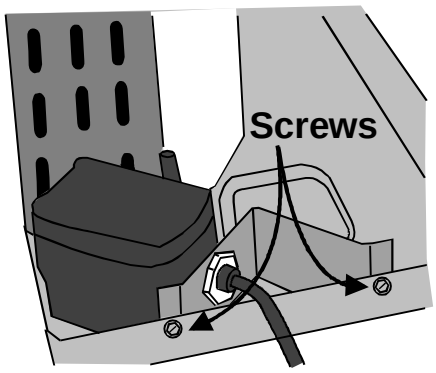
Accessory Installations



10. Place the pump bracket onto the end of the pump by feeding the pump cord through the hole in the bracket and pushing the bracket onto the threads of the pump. Slide the supplied washer onto the threads of the pump. Screw the pump nut onto the threads of the pump and tighten the nut so that the bracket is secure against the pump.



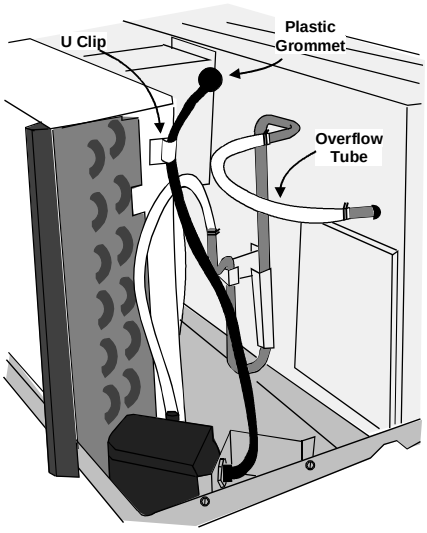
11. Orient the pump in the back left corner of the basepan and screw the pump bracket to the basepan with the provided two 1/2 inch #8 screws.



12. Remove the protective adhesive backing from the plastic U clip and mount the U clip to the plastic condenser shroud in approximately the position shown.

13. Snap the provided round plastic grommet into the top condenser baffle.

14. Place one of the hose clamps over one end of the 16 inch vinyl hose. Place the same end over the barbed discharge tube of the pump assembly. Place a hose clamp on the other end of the 16 inch hose. Place this same end over the shorter leg of the overflow tube and secure the hose with the hose clamp.



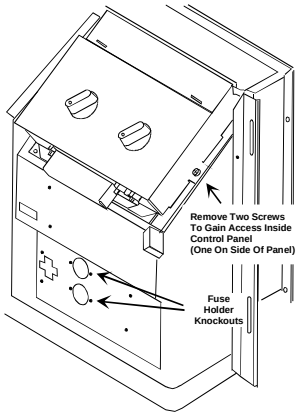
15. Place a hose clamp over one end of the 11 inch long hose. Push this same end over the longer leg of the overflow tube and secure with the hose clamp. Place another hose clamp over the other end of the 11 inch hose. Push this same end over the condensate tube protruding out from the back of the partition panel and secure with the hose clamp.

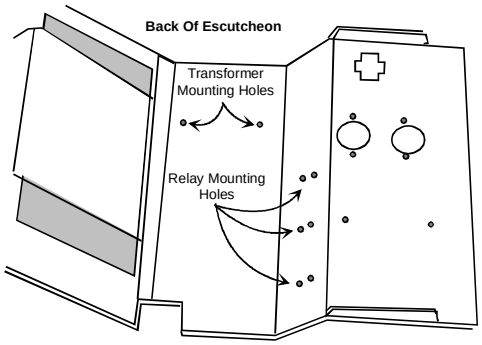
16. Route the condensate pump cord through the U clip on the condenser shroud, through the plastic grommet in the top condenser baffle, through the plastic ring in

Accessory Installations

the panel, and then through the hole in the panel where the compressor wires are routed through the panel. **NOTE:** The permagum may have to be removed to feed the wires through the panel, make sure wires have no slack and replace the permagum back into place to prevent air leaks.

17. To gain access inside the control panel, remove the knobs and escutcheon. Remove the two screws holding the panel in position. Tilt the control panel forward, being careful not to pinch any wires.
18. Lift the control panel up so the control panel is free of its hinges. Orient the control panel so there is easy access for mounting components to the control panel.





19. Using two #8 screws that are provided, screw the transformer to the control panel in the transformer mounting holes provided in the panel.
20. Mount the relay in one of the three relay mounting holes in the control panel making sure that the threaded stud is in the smaller hole and the metal tab is in the adjacent larger hole. Screw the provided nut onto the threaded stud from the opposite side of the control panel.
21. Disconnect the RD33, VT12, and BK19 wires from the control board and connect the YL5 (where RD33 was connected), YL3 (where VT12 was connected), and YL1 (where BK19 was connected). Connect RD33 to the piggyback terminal of YL5, VT12 to the piggyback terminal of YL3, and BK19 to the piggyback terminal of YL1. Make sure the OR8 wire is connected from the #6 terminal of the relay to 24 volt terminal of the transformer.
22. For 208 volt applications move the WH6 wire terminal from the 240 volt terminal of the transformer to the 208 terminal of the transformer.
23. Units that have a Power Vent or Power Door Kit already installed in the chassis should refer to the proper wiring schematic for proper wiring of the condensate pump kit. Use the second set of transformer holes to mount the transformer.
24. Units that have a 2 stage heater already installed in the chassis should refer to the proper wiring schematic for proper wiring of the condensate pump kit.
25. Units that have a Power Vent or Power Door Kit and a two stage heater already installed in the chassis should refer to the proper wiring schematic for proper wiring of the condensate pump kit.
26. Install the basepan drain plug into the basepan drain hole by pushing it up into the drain hole from the bottom of the basepan. This will defeat the thermostatic controlled drain valve. The basepan drain is located left of the outside coil (as viewed from the back of the unit).

NOTE: When using a condensate removal pump, extra care must be taken to keep the basepan clean and free of algae or fungus. Failure to do so may result in the failure of the condensate removal system.

Accessory Installations

Condenser Baffles

Description

The condenser baffle kit is required when replacing an existing package terminal unit and the original outdoor grille is not made by the same manufacturer. These baffles are required to deflect discharge air away from the inlet, preventing recirculation of hot condenser air.

This kit is intended to be used with outdoor grilles having horizontal louvers. If the outdoor grille has vertical louvers, contact the manufacturer of the package terminal unit.

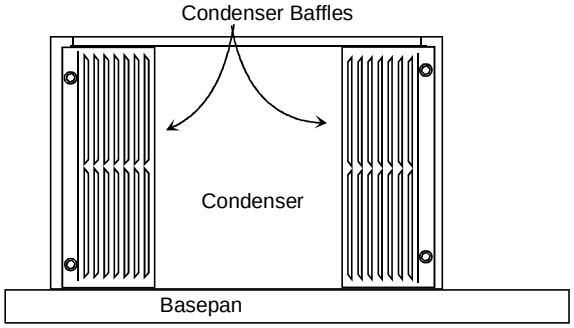
NOTE: This kit is *not* to be used when the outdoor grille is provided by the original manufacturer of the package terminal unit.

⚠ CAUTION

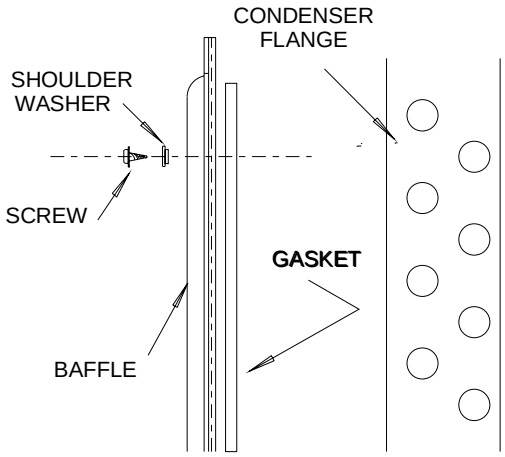
To prevent damage to the unit due to restricted air flow, remove any baffles or deflectors of any kind from the outdoor grille.

Installation

1. Locate the baffles on the condenser coil flange as shown. Position the louvers to direct the air toward the center as the air leaves the coil.



2. Using the screws and shoulder washers provided, secure the grille to the condenser flange. **NOTE:** Be sure to install the gasket between the grille and the flange as shown.



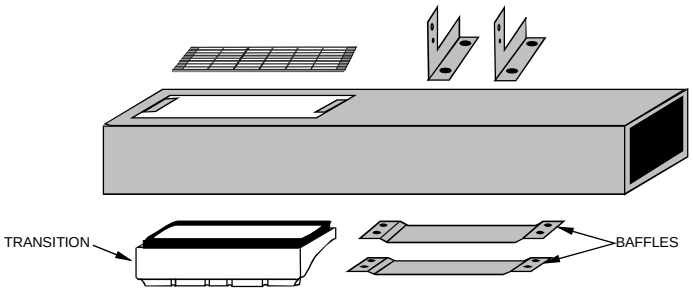
Accessory Installations

Duct Kit

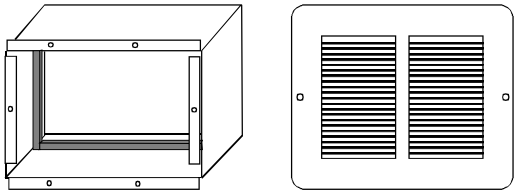
Introduction

Using these kits allows the PTAC unit to supply conditioned air, not only to the room where the unit is installed, but also to an adjoining room.

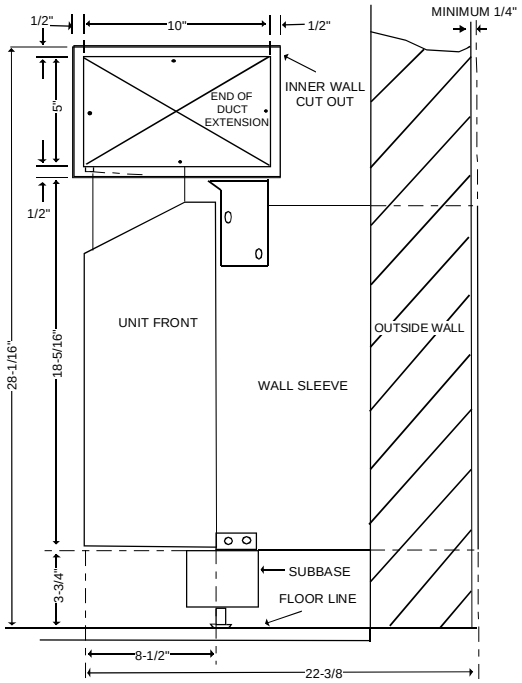
NOTE: In the Main Duct Kit, Extension Duct Kit and the Terminal Duct Kit all required hardware is provided (not shown below).



Main Duct Kit



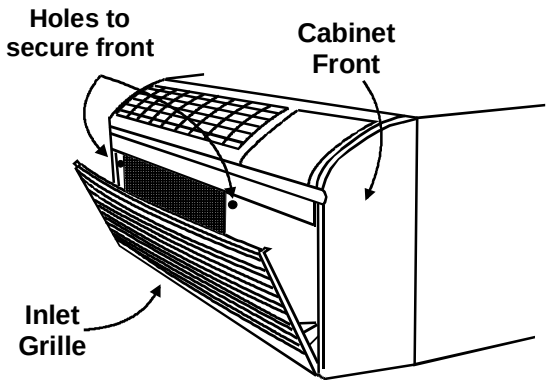
Extension Duct Kit



Terminal Duct Kit
Installation Dimensions

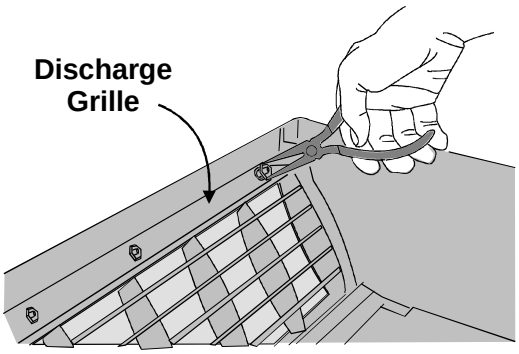
Installation

1. If the cabinet front is screwed to the chassis then remove the screws located behind the inlet grille. Pull the inlet grille forward from the top of the grille to access two screws.

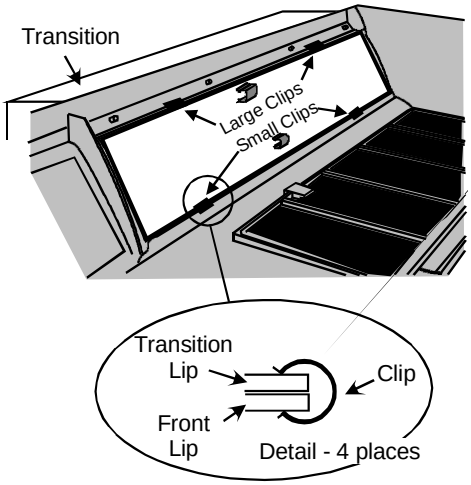


2. Remove cabinet front from chassis by tilting the bottom of the front forward, lifting slightly up and forward.
3. Disengage discharge grille from cabinet front by removing four pal nuts from under the front.

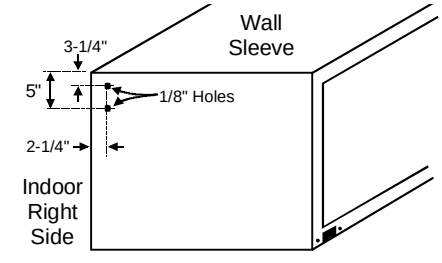
Accessory Installations

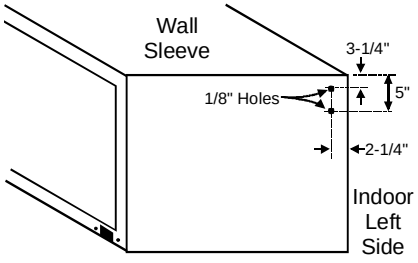


4. Place transition piece in discharge opening of the cabinet front and secure with the provided U-clips. Set front aside.



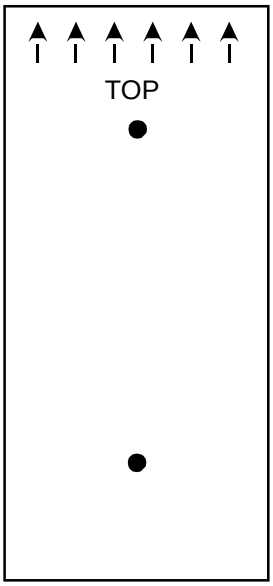
5. Unplug and remove chassis from wall sleeve. Drill two 1/8” holes on left and right sides of wall sleeve in proper locations. See figure below for hole dimensions and for template.





Note: If there is not enough clearance between sleeve and partition wall to drill the holes, layout and drill the holes from inside the sleeve.

6. Install chassis back into wall sleeve. Reinstall cabinet front to the chassis. Make sure top of cabinet front catches metal flange on chassis.

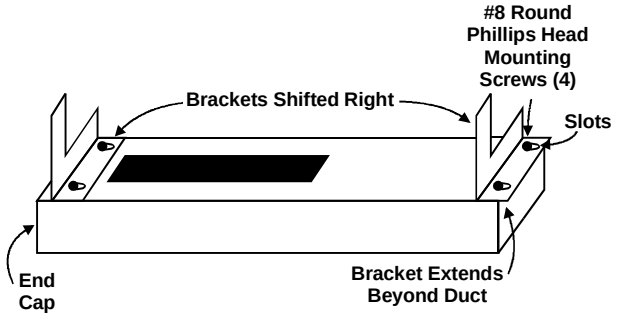


Template

7. Determine if the duct is to be extended to the right of the unit (where controls are located) or to the left of the unit (opposite the controls).

   For left side extensions remove the main duct end cap and reinstall on the right end of the duct. Using the four painted sheetmetal screws, secure the two mounting brackets to the main duct.

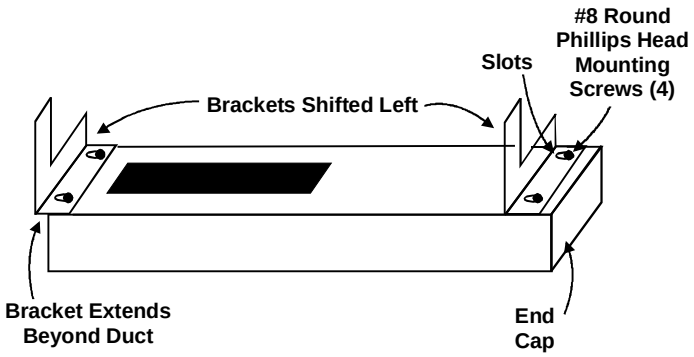
   Two mounting slots are provided in each bracket. To mount extension on right side, adjust bracket so the screws are in left side of bracket slots; for mounting extension on the left, adjust brackets so the screws are in right side of slots.



On right side extensions shift the brackets to the right.

Accessory Installations

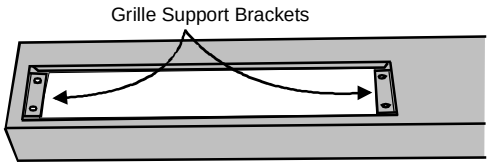
For left side extensions shift the brackets to the left.



Airflow Baffle

8. Determine amount of air desired at main duct and at extension duct. See Table 1 to select the appropriate baffle. To install air baffle, place baffle on grille support brackets on main duct. The baffle must be placed so that the two extruded holes are on top of the two front bracket holes.

Baffle	Dimensions	Air Flow	
		Main Duct	Ext. Duct
Small	3-11/16" x 31-3/4"	80%	20%
Large	4-5/16" x 31-3/4"	65%	35%



9. Install discharge air grille on top of the air baffle. Secure the grille to the duct with the Pal nuts that are provided by reaching through the opening in the bottom of the duct.
10. Place main duct assembly on the transition. Secure the brackets to the wall sleeve with four number 10 hex head screws. *Do not apply pressure on top of duct during this installation!*
11. Install two Phillips head screws into the top flange of the main supply duct (where the extension duct is to be connected, see next figure). Do not tighten screws. Leave space for one thickness of the duct sheet metal between screw head and main duct flange.

Note: Total length of duct extension assembly, including field supplied duct between main and extension duct, should not exceed 15 effective feet (according to ASHRAE standards).

12. In the room where the main duct kit is attached to the chassis, cut a hole in the wall at the same height from the floor that the main duct is located. Cut the hole 1/8" larger than the width and height (10" x 5") dimensions of the extension duct.
13. Measure from the end of the main duct where the extension duct will be connected to the hole in the wall. If necessary cut the extension duct to a length where the cut end protrudes into the wall's inner space and one inch from the adjoining room's wall surface.

    NOTE: The extension duct can be cut into two pieces if overall length of duct does not exceed 21 inches.
14. Insert the extension duct into the opening in the wall. Install the extension duct by placing the slotted flange over the two screws in the main duct. Using two #8 round Phillips head screws, mount bottom of extension.

Duct Termination Kit Installation

15. The sheet metal collar of the terminal duct kit will be mounted in the wall of the adjoining room opposite the room where the main duct kit is attached to the PTAC chassis.
16. Cut a hole in the wall of the adjoining room such that the hole is centered on the extension duct that is currently in the wall of the opposite room. See figure below for proper wall hole dimensions for sheet metal collar.
17. Insert the sheet metal collar into the wall so that the flanges will mount flush to the wall after the collar is pushed all the way into the wall. While pushing the collar into the wall make sure the extension duct is inside the collar. Use four #8 screws to attach metal collar to wall.
18. Center the metal grille over the sheet metal collar and use two #8 screws (provided) to attach the grille to the metal collar.

Accessory Installations

Electric Heat

Description

The supplemental electric heater kits described in this manual are available for field installation on heaterless models of packaged air conditioners and heat pumps.

Unit power cords are factory installed for heater kits up to 15 amps on 230/208 volt units and 20 amps on 265 volt units. When a 20 (230/208 volt units), 25, or 30 amp heater kit is installed, the corresponding power cord is supplied with the heater kit.

⚠ WARNING

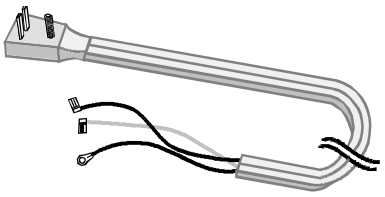
To avoid death, personal injury or property damage due to electrical shock, the installer must ensure the unit is properly electrically polarized and grounded. See specific instruction.

IMPORTANT NOTE: **To prevent component failure, do not install HK350E or HK450E (5 Kw) heater kits into 7,000 or 9,000 BTU air conditioners (PTC07, PTC09) or heat pumps (PTH07, or PTH09).**

Unit Preparation

NOTE: The unit power cord is shown in Figure 1. The power cord plug configurations are shown in Figure 3.

1. Remove the unit front by tilting the bottom of the front outward and then lift the front straight up.
2. Remove the control knobs on the control panel cover by pulling upward on the knobs. Remove the escutcheon.
3. Remove the control panel cover by removing the two screws holding the control panel cover. Tilt the control panel forward to gain access to the wires.



Power Cord

4. The incoming electrical power on all 265 volt units is fuse protected. On all kits, except the 5 Kw kit, replace the fuse with the fuse supplied with the kit. On 5 Kw heater kits replace the existing fuseholder with the fuseholder (with fuse) supplied with the kit.

   NOTE: The incoming electrical power on 230/208 volt units is not fuse protected unless a fuseholder kit has been either factory or field installed.

Power Cord Installation (HK335E, HK350E, HK450E)

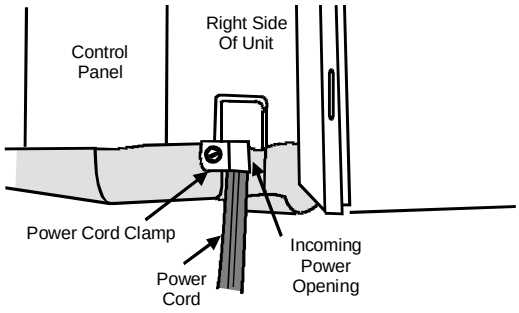
⚠ WARNING

To avoid the possibility of electrical shock or death, the new power cord must be properly polarized and grounded.

⚠ WARNING

If the hot L1 and neutral L2 wires on 265 volt models are reversed, portions of the unit will remain live, even when the unit disconnect switch or overcurrent protection is opened. This will present a serious shock hazard.

1. If the unit has a power cord, remove the power cord clamp located near the bottom right of the chassis.



Incoming Power Opening

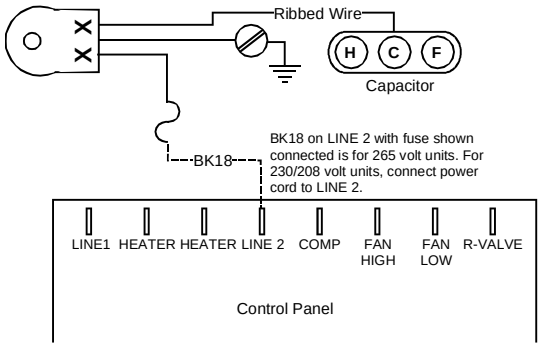
2. On *230/208 volt* units disconnect the ribbed lead from the C terminal on the capacitor and the smooth lead from LINE 2 terminal on the control board and the green ground wire from the partition panel. Discard both the cord and the cord clamp.

   On *265 volt* units disconnect the ribbed lead from the C terminal on the capacitor and the smooth lead from the fuseholder and the green ground wire from the partition panel. Discard both the cord and the cord clamp.
3. Push about 20 inches of the power cord shipped in the

Accessory Installations

kit through the incoming power opening.

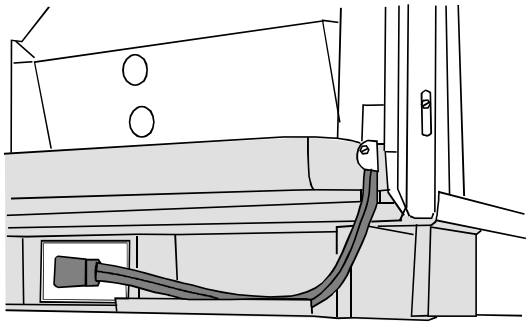
4. Secure the cord to the partition panel using the power cord clamp and #8 screw shipped in the kit.



Power Cord Connections

5. Connect the ribbed lead to the C terminal on the capacitor.
6. On *230/208 volt* units connect the smooth lead to LINE 2 terminal on the control board.

   On *265 volt* units connect the smooth lead to the fuseholder.
7. Connect the power cord's green ground wire to the partition panel using the ground screw provided in the kit.
8. If the unit is mounted on a subbase with a power receptacle, remove the right front cover plate of the subbase, connect the plug end of the power cord into the subbase power receptacle, and route the cord up out of the subbase through the cord slot in the right side of the subbase. Replace the subbase right front cover panel.



Subbase Power Cord

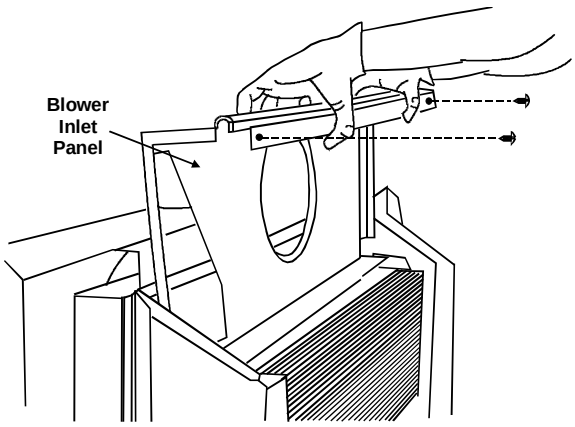
Electric Heater Installation.

⚠ CAUTION

To avoid cuts from sharp edges of sheet metal, use gloves.

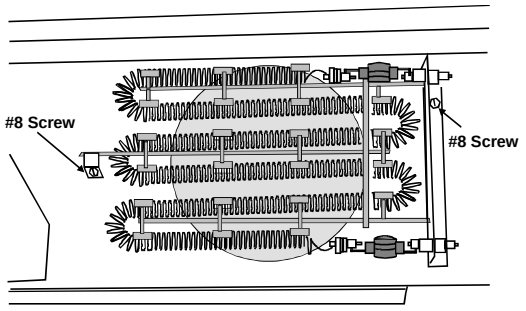
IMPORTANT NOTE: To prevent component failure, do not install HK350E or HK450E (5 Kw) heater kits into 7,000 or 9,000 BTU air conditioners (PTC07, PTC09) or heat pumps (PTH07, or PTH09).

1. Remove the two mounting screws holding the screen above the indoor coil in place. Remove the screen.
2. Remove the two screws holding the blower inlet panel in place. Lift the blower inlet panel out of the unit and set aside.

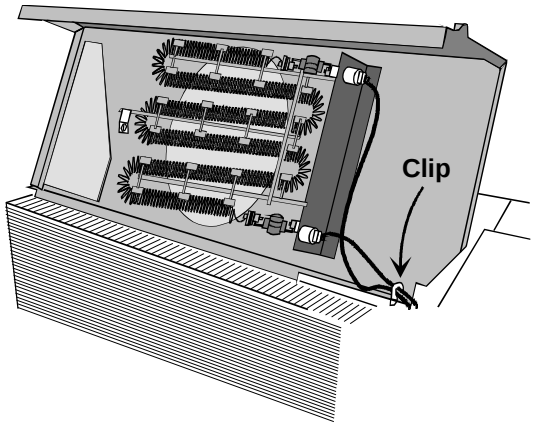


3. Attach heater to the blower inlet panel with two #8 screws provided with the kit.

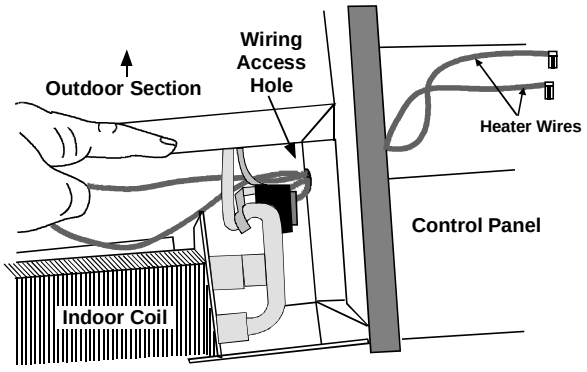
Accessory Installations



4. While placing the blower inlet panel back into the chassis, insert the heater wires through the clip and into the hole located on the mid partition panel.

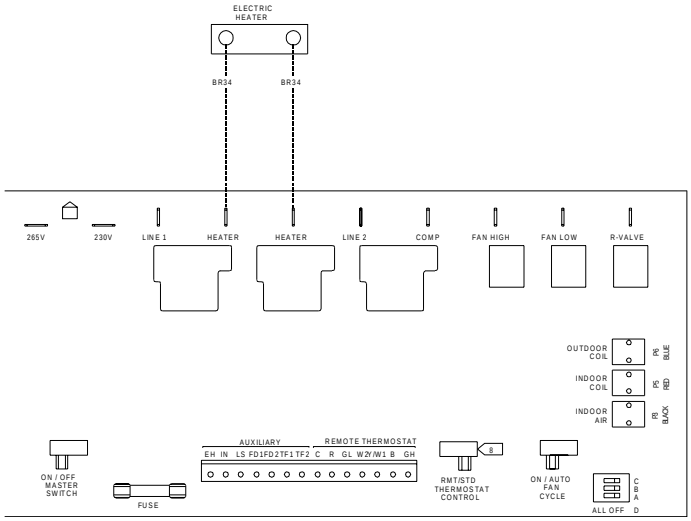


5. Lower the blower inlet panel down into the chassis. Secure the blower inlet panel to the chassis with the screws removed in Step 1 and replace the screen removed in Step 2.



For single Stage Heaters Follow Step 6 then skip to Step 16.

6. Connect brown 34 and brown 35 heater wires to the 1/4 inch terminals on the control board marked HEATER.

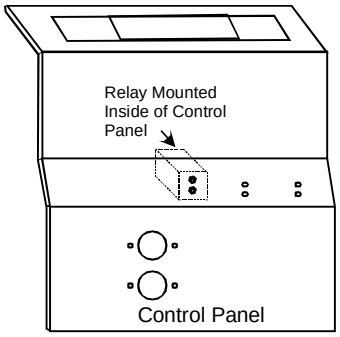


Single Stage Heater Schematic

For two stage heaters Follow Steps 7 through 15

7. Mount the heater relay supplied with the heater kit to the middle section of the control panel. Place the studs on the heater relay through the respective holes on the control panel and tighten the nut onto the threaded stud.

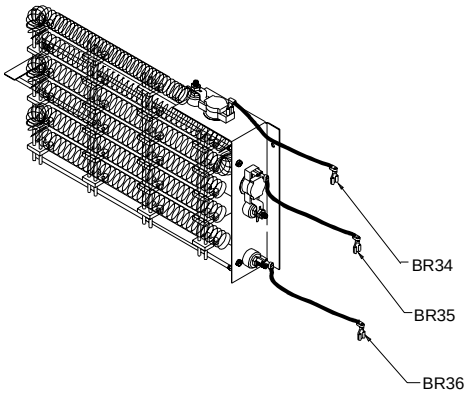
NOTE: All wiring required for this kit is preconnected to the heater relay or the heater assembly.



8. After disconnecting the BK16 wire from the FAN HIGH terminal on the control board, connect it to the heater relay 3 terminal.

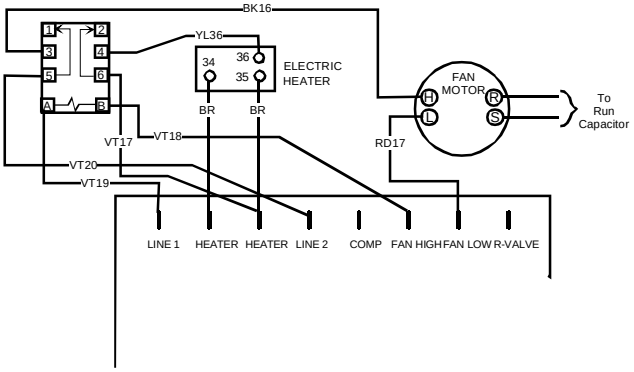
Accessory Installations

9. On the LINE 1 terminal of the control board:
   A. Disconnect the RD33 wire.
   B. Connect VT19 from the heater relay A terminal.
   C. Reconnect the RD33 wire to the piggyback terminal of VT19.
10. Connect BR34 from the heater 34 terminal to the HEATER terminal next to the LINE 1 terminal on the control board.
11. Connect VT17 from the heater relay 6 terminal to the HEATER terminal next to the LINE 2 terminal on the control board.
12. Connect BR35 from the heater 35 terminal to the HEATER terminal next to the piggyback terminal of VT17 on the L2 terminal on the control board.
13. Connect VT18 from the heater relay B terminal (as shipped from the factory) to the FAN HIGH terminal on the control board.
14. On the LINE 2 terminal of the control board:
   A. Disconnect the power wire (BK18 on 265 volt units, power cord on the 230/208 volt units).
   B. Connect VT20 from the heater relay 5 terminal.
   C. Reconnect the power wire to the piggyback terminal of VT20.



Two Stage Heater
Wire Connections

15. Connect wire BR36 from the heater 36 terminal to the heater relay 4 terminal.



2 Stage Heater Schematic

6. Find the auxiliary “electric heater” data plate label on the PTAC unit near the serial plate. Check mark the appropriate box on the data plate to indicate data for the heater installed in the unit.
17. Replace the control panel, control panel cover, escutcheon plate and the unit front.

Accessory Installations

Electric Heater		Electrical Heater kW 230/208 V		Heater BTU/HR		Total Watts		Total Amps		Minimum Circuit Ampacity	Overcurrent Protection**
Size (kW)	Ord. No.	Stage 1	Stage 2	230V	208V	230V	208V	230V	208V		
1.5	HK315E	1.5/1.2	-	5100	4100	1580	1280	7.1	5.8	8.8	15A
2.5	HK325E	2.5/2.0	-	8500	6800	2580	2080	11.5	11.5	14.2	15A
3.5	HK335E	3.5/2.9	-	12000	9900	3580	2980	15.8	15.8	19.6	20A
5.0*	HK350E	3.5/2.9	1.5/1.2	17100	14000	5080	4180	22.3	22.3	27.8	30A

*On two stage heater kit "High Heat" = both stages ON; "Low Heat" = stage 1 on only.

**Recommended field supplied time delay fuses or HACR type circuit breaker.

230/208 Volt Electric Heater and Power Cord Data

Electric Heater		Electrical Heater kW 230/208 V		Heater BTU/HR	Total Watts	Total Amps	Minimum Circuit Ampacity	Overcurrent Protection**
Size (kW)	Ord. No.	Stage 1	Stage 2	265V	265V	265V		
1.5	HK415E	1.5	-	5100	1580	6.3	7.7	15A
2.5	HK425E	2.5	-	8500	2580	9.9	12.3	15A
3.7	HK435E	3.7	-	12600	3780	14.5	18	20A
5.0*	HK450E	3.5	1.5	17100	5080	19.4	24.1	25A

*On two stage heater kit "High Heat" = both stages ON; "Low Heat" = stage 1 on only.

**Recommended field supplied time delay fuses or HACR type circuit breaker.

265 Volt Electric Heater and Power Cord Data

LISTED ACCESSORIES - PACKAGE TERMINAL AIR CONDITIONER (SA5810)

AUXILIARY HEATERS - 230/208 VOLT

INSTALLER TO MARK HEATERS INSTALLED:

☐ NONE

	HEATER KW	HEATER P/N	MAX AMPS	MIN. CIR. AMPACITY	MAX. FUSE SIZE
☐	1.5/1.2	20252001	7.1	8.8	15
☐	2.5/2.0	20252002	11.5	14.2	15
☐	3.5/2.9	20252003	15.8	19.6	20
☐	5.0/4.1	20257501	22.3	27.8	30

230/208 Volt Electric Heat Auxiliary Data Label

LISTED ACCESSORIES - PACKAGE TERMINAL AIR CONDITIONER (SA5810)

AUXILIARY HEATERS - 265 VOLT

INSTALLER TO MARK HEATERS INSTALLED:

☐ NONE

	HEATER KW	HEATER P/N	MIN. CIR. AMPACITY	CIRCUIT BRKR.	MAX. FUSE SIZE
☐	1.5	20252006	7.7	15	15
☐	2.5	20252007	12.4	15	15
☐	3.7	20252008	18.1	N/A	20
☐	5.0	20257502	24.2	N/A	25

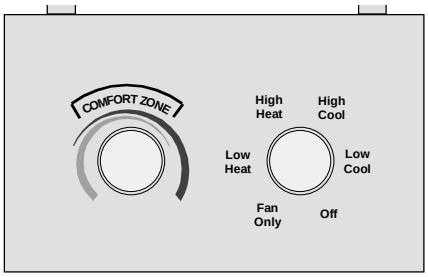
265 Volt Electric Heat Auxiliary Data Label

Accessory Installations

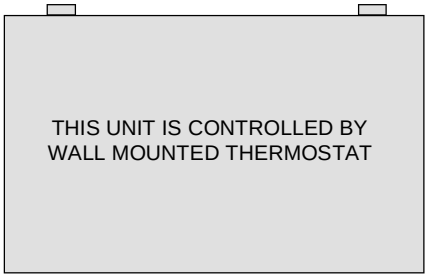
Escutcheon - Hydronic Remote

Description

This kit provides an attractive replacement escutcheon, allowing the removal of control knobs and graphics no longer required when a wall thermostat is used to control the unit.



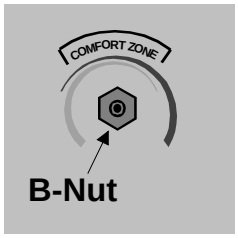
Standard Escutcheon



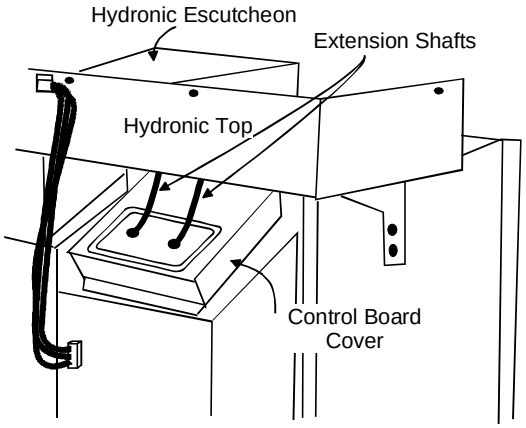
Remote Escutcheon

Installation Instructions

1. Lift the cabinet front off the chassis.
2. Remove the unit control knobs by pulling the knobs off the extension shafts.
3. Remove the b-nut mounting the extensions to the hydronic escutcheon.



4. Reaching below the hydronic top, remove the extensions from the chassis by pulling the extensions off the control shafts. Pull the extensions out of the hydronic top.



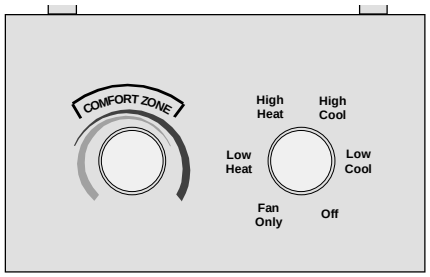
5. After removing the backing, carefully place the remote escutcheon over the hydronic escutcheon. Ensure the escutcheon is firmly in place, without any air bubbles.
6. In the event the extension shafts may be needed, after reassembling the B-nut and the extension shafts, tape the extension shafts to the control board cover.
7. Replace the cabinet front.

Accessory Installations

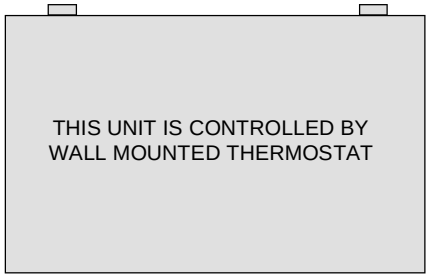
Escutcheon - Remote

Description

This kit provides an attractive replacement escutcheon, allowing the removal of control knobs and graphics no longer required when a wall thermostat is used to control the unit.



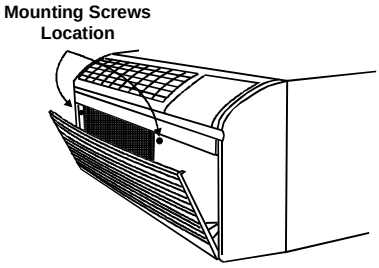
Standard Escutcheon



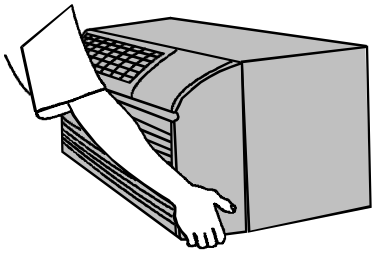
Remote Escutcheon

Installation Instructions

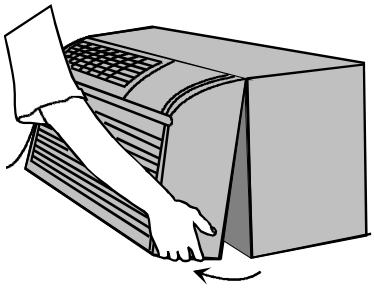
1. Remove the two screws securing the front to the chassis. **NOTE:** Not all installations will use these screws.



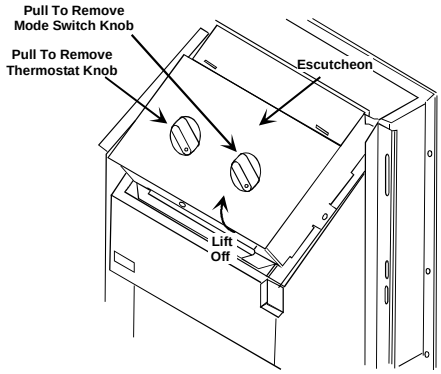
2. Grasp the cabinet front as shown.



3. Pull the bottom of the cabinet front away from the chassis until the retaining clips disengage.



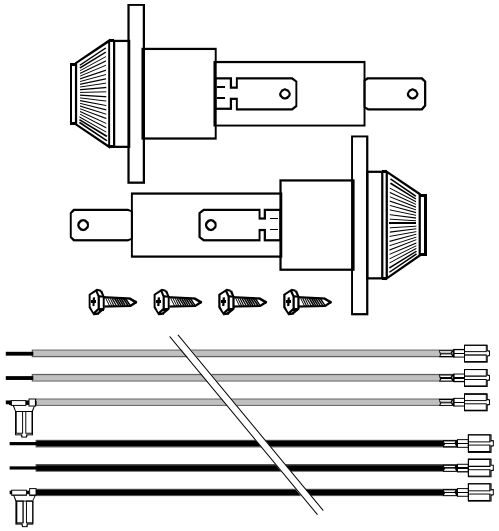
4. Lift the cabinet front off the chassis.
5. Remove the unit control knobs by pulling the knobs off the control shafts.



6. Lifting the front edge of the escutcheon, slide the tabs at the top of the escutcheon out of the retaining holes and remove the escutcheon.
7. Replace the escutcheon with the one from this kit by inserting the tabs at the top of the escutcheon into the retaining holes and laying the escutcheon flat on the control panel.
8. Replace the front by reversing steps 1 through 4.
9. Store the control knobs and escutcheon just removed from the unit for reinstallation if the wall thermostat is no longer used.

Accessory Installations

Fuse Kit



Fuse Holder Kit

Description

This optional fuse holder kit can be installed directly in the chassis or in the optional subbase.

Fuse holder kits are available in 230/208 volt ratings. The installer should supply time delay fuses at 15, 20, 25 or 30 amps in accordance with the "Maximum Overcurrent Protection" as listed on the unit nameplate. Fuses may be purchased from the parts department.

Installation

The installation and servicing of the equipment referred to in this booklet should be performed by qualified, experienced technicians.

⚠ WARNING

To avoid the possibility of property damage, personal injury, or death, installer must use proper polarization. See specific instructions.

⚠ CAUTION

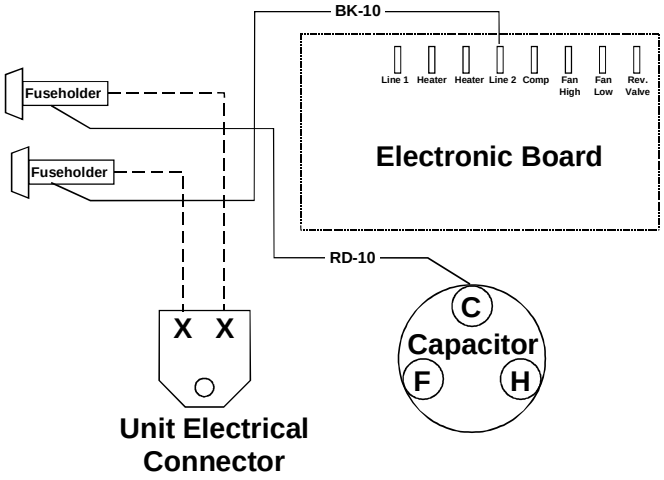
Use only copper conductors for electrical connections. The use of other types of conductors may result in galvanic corrosion, resultant equipment failure, overheating or fire.

⚠ CAUTION

All wiring must comply with applicable local and national codes. Type and location of fused disconnect switch(es) must comply with all applicable codes. Failure to follow these codes could result in overheating and equipment failure.

Fuse Holder Kit Installation (Without Subbase)

See page 27 for installation in a subbase.

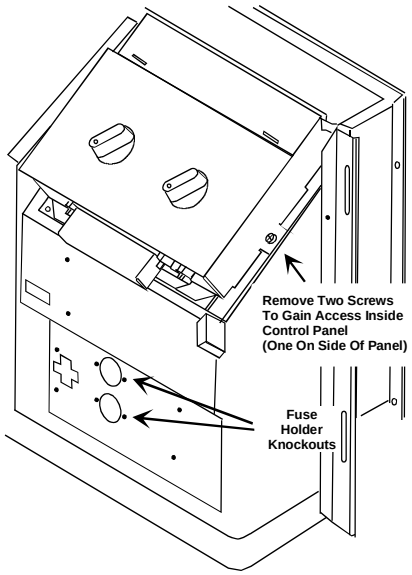


Fuse Holder Diagram

Control Panel Installation

1. Remove front by rotating bottom outward and then lifting up and out from chassis.
2. To gain access inside the control panel, after removing the knobs and escutcheon, remove the two screws holding panel in position. Tilt control panel forward, being careful not to pinch any wires.
3. As viewed from the front, remove both knockouts on the control panel.
4. Insert two fuse holders from the front. The fuse holders should be oriented so the quick-connect tabs are toward the center of the unit. Attach fuse holders using the screws and nuts provided.

Accessory Installations



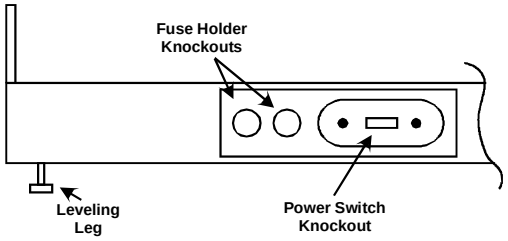
Control Panel

5. Remove both power cord leads, one lead from the capacitor and one from the electronic board.
6. Install one power cord lead on the center terminal of one fuse holder.
7. Install the remaining power cord lead on the center terminal of the second fuse holder.
8. Connect BK-10 wire from the side terminal of one fuse holder to the L2 terminal on the electronic board.
9. Connect RD-10 wire from the side terminal of the other fuse holder to the common (C) terminal on the capacitor.
10. Tilt control panel back to original location, being careful not to pinch any wires. Align the control panel with the cover and screw panels into place with original screws. Replace escutcheon and control knobs.

Fuse Holder Kit Installation (With Subbase)

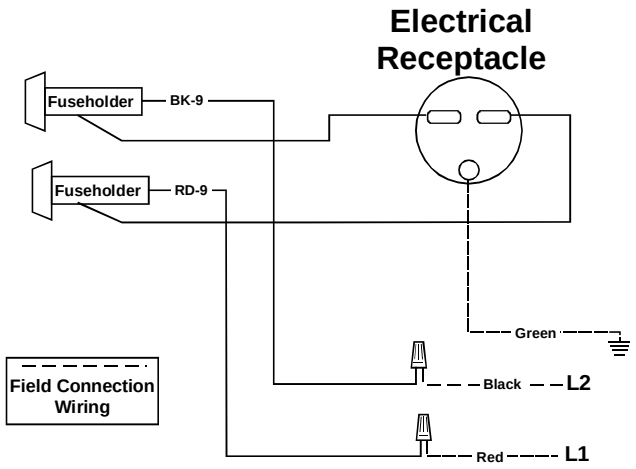
See page 26 for installation in the control panel.

1. Remove both knockouts at the fuse holder location.



Subbase (Left Side)

2. Install the fuse holders using screws provided. The side connector tab on the fuse holders should be towards the left.
3. Connect a stripped BK-9 wire to the center of the quick-connect tab of the fuse holders. Wire nut the other end of this wire to the black field connection wire (L2).
4. Connect the other stripped BK-9 wire to the quick-connect tab on the side of the same fuse holder. Wire nut the other end to black subbase wire leading to receptacle.

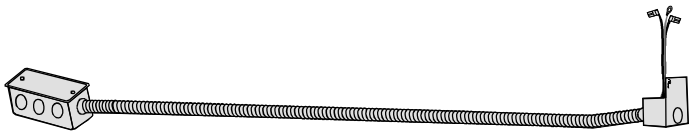


Fuse Holder Diagram
Subbase Installation

5. Connect the “stripped” RD-9 wire to the center quick-connect tab of the second fuse holder. Wire nut the other end to the red field connection wire (L1).
6. Connect the other stripped RD-9 wire to the quick-connect tab on the side of the second fuse holder. Wire nut other end to red subbase wire which leads to receptacle.
7. Insert time delay fuses into the fuse holders. Size all fuses by the “Maximum Overcurrent Protection” shown on the nameplate. Also refer to the serial plate on the unit.

Accessory Installations

Hard Wire



Description

Hardwire Junction Box (Direct Wire Sub-Base)
The hardwire junction box kit is used to direct wire the unit when it is not desirable to use the standard unit subbase or the unit power cord. The junction box provides a protected enclosure for electrical connections as required by some electrical codes.

The hardwire junction box is intended to be mounted on the floor or the adjacent wall.

The junction box is furnished with approximately 2-1/2 feet of 1/2 inch flexible steel conduit and a metal box for securing the conduit to the unit cabinet at the incoming power opening.

An optional 230/208V or 265V power switch assembly is available for use with the hardwire junction box or subbase. The switch provides a POWER ON/OFF function at the unit as required by some electrical codes. A replacement junction box cover plate is provided with each switch kit. For additional information, refer to the Power Switch Installation Instructions.

Junction Box Kit Installation and Wiring Procedure

The installation and servicing of this equipment should be performed by qualified, experienced technicians.

Electrical connections at the unit must be made after the unit chassis is installed in the wall sleeve.

The installer must determine and supply the mounting components for attaching the junction box to the wall or floor.

⚠ WARNING

To avoid death, personal injury or property damage due to electrical shock, this unit must be properly polarized. See the following instructions for correct polarization.

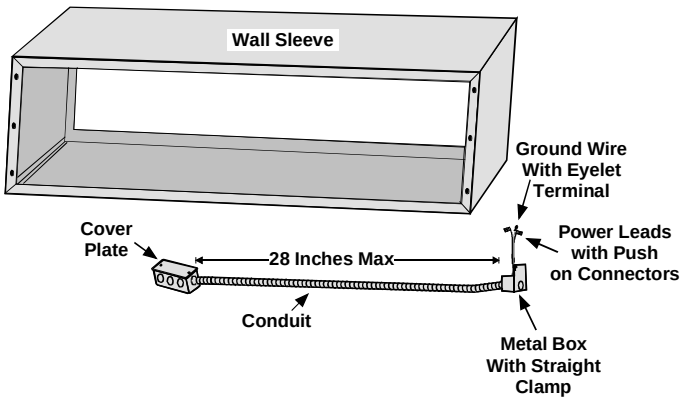
⚠ CAUTION

To avoid property damage and equipment overheating due to galvanic corrosion, use copper conductors only.

⚠ CAUTION

All wiring must comply with applicable local and national codes. Types and location of disconnect switches must comply with all applicable codes.

1. Remove the cover plate from the junction box.
2. Mount the junction box to the wall or floor within 28 inches of the lower right corner of the wall sleeve.



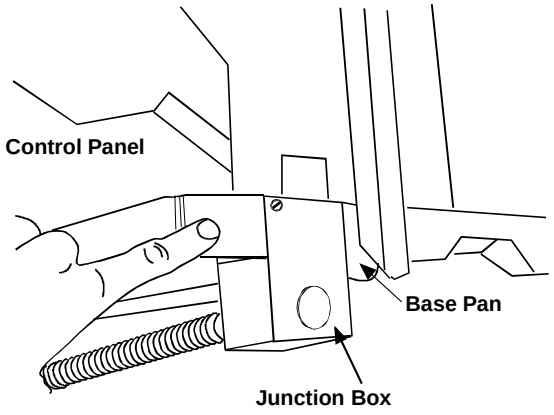
Mounting Hardwire Junction Box Kit

3. If a disconnect switch is to be used, make electrical connections to it and mount the switch in the junction box. Refer to the “Power Switch” Installation Instructions.
4. Remove control panel assembly by removing the two screws holding control panel in place. Rotate panel forward.
5. Disconnect the power cord leads from all electrical connections including the ground wire.
6. Remove the power cord clamp and the power cord from the unit.
7. For 230/208-volt units, remove and discard the white lead from the wire assembly. For 265-volt units, remove and discard the red lead from the wire assembly.
8. Remove the retaining ring from the threaded portion of the straight conduit clamp. Insert the three wires into

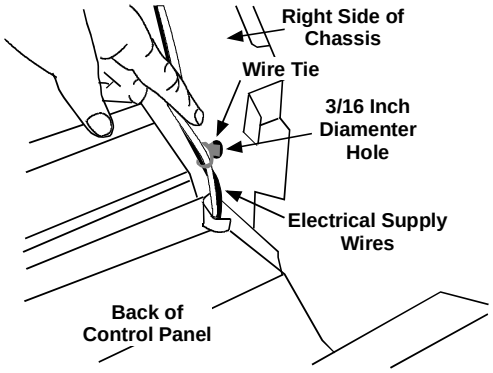
Accessory Installations

the metal box through one of the two openings in the box. Replace the hole cover grommet into the unused hole to prevent objects from entering the box.

9. Replace the retaining ring back on the conduit clamp inside the metal box and tighten the ring securely.
10. Insert the three wires extending from the metal box into the incoming power opening on the unit so that approximately 20 inches of the wires protrude through the opening.
11. Attach the metal box to the chassis with the two screws provided.
12. Insert the wire tie into the 3/16 inch diameter hole located just above the incoming power opening. Tie all wires together securely with the wire ties.



Metal Box Location



Electrical Wiring Routing

208/230 Volt Units

1. Remove and discard the white lead from the wire assembly.
2. Connect the black lead to the line 2 terminal on the control board.
3. Connect the red lead to the common (C) terminal on the capacitor.
4. Connect the ground wire to the partition panel where the ground wire on the power cord was located. Use the supplied green ground screw.
5. Connect the red lead in the wire assembly at the junction box to the red lead of the field power source.
6. Connect the black lead in the wire assembly at the junction box to the black lead of the field power source.
7. Connect the ground wire of the field power source to the ground wire of the wire assembly at the junction box.
8. Install the junction box cover plate.
9. Reinstall the control panel assembly.

265 Volt Units

1. Remove and discard the red lead from the wire assembly.
2. Connect the black lead to the center terminal of the fuse holder.
3. Connect the white lead to the common (C) terminal on the capacitor.
4. Connect the ground wire to the partition panel where the ground wire on the power cord was located. Use the supplied green ground screw.
5. Connect the white lead of the wire assembly at the junction box to the white lead of the field power source.
6. Connect the black lead of the wire assembly at the junction box to the black lead of the field power source.
7. Connect the ground wire of the field power supply to the ground wire of the wire assembly at the junction box.
8. Install the junction box cover plate.
9. Reinstall the control panel assembly.

Accessory Installations

Hydronic Heat

Description

Where a central boiler is available, the Hydronic Kit can be installed on the PTAC unit. This kit completely encloses all plumbing and coils, but still allows easy access to controls. In addition, the chassis can slide out for service without removing hydronic plumbing. Heating and cooling operations are controlled by unit's thermostat. Cooling operation is not affected by the addition of the hydronic kit. Heat Pump models will operate on heat pump function down to the switchover temperature before operating on hydronic heat. The electrical connections are plug-in type to assist in kit installation.

Freeze Protection

The hydronic kit has a factory installed freeze protection thermostat which will allow a normally closed or normally open water/steam valve to open when the thermostat senses near freezing temperatures at the hot water or steam coil. Once the temperature of the freeze thermostat rises above 58° F the water valve will return to normal mode operation.

Tools Required

1/4 Inch Electric Drill
1/8 Inch Diameter Drill Bit
Center Punch and Hammer
6 Foot Rule
Combination Square
1/4 Inch Nut Driver or Socket
5/16 Inch Nut Driver or Socket
Torch, Solder, Flux, etc.

Job Preparation

Before installing the hydronic kit, the following steps should be complete:

1. Wall sleeve installed and completely sealed.

   NOTE: The wall sleeve must be extending at least 3" and no more than 3-1/8" past the finished interior wall in order to properly install the hydronic kit.

2. Plumbing stub-outs complete.
3. Unit chassis uncrated but not installed and **not yet connected to electrical source.**
4. A standard model chassis with an HTK3A or HTK4A kit installed *or* a hydronic model chassis.

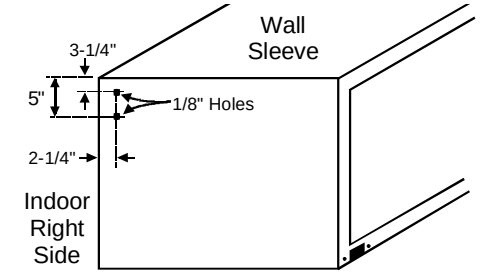
Installation

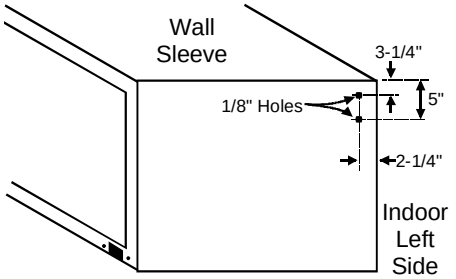
The installation and servicing of the equipment referred to in this booklet should be performed by qualified, experienced technicians.

Be sure to engage the services of a qualified water treatment specialist to determine what water treatment, if any, is needed. The manufacturer will not assume responsibility for equipment failures resulting from untreated or improperly treated water.

1. If the chassis is not a hydronic model chassis, remove polymer front from chassis and discard. Install a HTK3A or HTK4A kit as required.
2. Drill two 1/8" diameter holes on both sides of wall sleeve as shown.

   NOTE: If there is not enough room to drill holes from the side then drill holes from inside the wall sleeve.





3. Unbox the hydronic kit and discard the packaging material. The cardboard packaging material should be recycled.
4. Mount the two support brackets to the bottom of the hydronic top as shown with supplied four, 3/8-inch #8 screws.

Accessory Installations

Hydronic Heat Kit Application Data															
Heating Capacity (Btuh)- Hot Water															
Gal. per Min.	Pressure Drop (psig)		7000 & 9000 BTUH Units				12000 BTUH Units				15000 BTUH Units				
			200° F. EWT		180° F. EWT		200° F. EWT		180° F. EWT		200° F. EWT		180° F. EWT		
	Coil	2-Way Valve	Fan Speed Hi	Fan Speed Lo	Fan Speed Hi	Fan Speed Lo	Fan Speed Hi	Fan Speed Lo	Fan Speed Hi	Fan Speed Lo	Fan Speed Hi	Fan Speed Lo	Fan Speed Hi	Fan Speed Lo	
1.00	0.93	0.19	14910	13388	12639	11186	16945	14387	14257	12152	17858	15534	15049	13312	
1.13	1.03	0.24	15216	13706	12898	11452	17360	14689	14607	12407	18276	15955	15401	13672	
1.25	1.14	0.30	15500	13997	13139	11696	17745	14968	14930	12642	18666	16338	15729	14001	
1.38	1.26	0.36	15762	14262	13361	11917	18099	15222	15228	12858	19025	16684	16032	14297	
1.50	1.40	0.43	16003	14501	13565	12117	18423	15454	15501	13053	19356	16991	16311	14561	
1.63	1.55	0.50	**16222	14714	13751	12295	18717	15661	15748	13228	19658	17261	16565	14792	
1.75	1.71	0.58	16420	14900	13919	12450	18980	15845	15969	13384	19930	17494	16794	14991	
1.88	1.89	0.66	16596	15061	14068	12584	19212	16006	16165	13519	20173	17689	16999	15158	
2.00	2.10	0.76	16751	15195	14199	12696	**19268	16142	16212	13635	20387	17846	17179	15293	
2.13	2.32	0.85	16884	15302	14312	12786	19586	16255	16479	13730	**20445	17965	17229	15395	
2.25	2.57	0.96	16995	15384	14407	12854	19727	16345	16598	13806	20727	18047	17466	15465	
2.38	2.84	1.07	17085	15439	14483	12900	19838	16410	16691	13861	20853	18091	17572	15503	
2.50	3.14	1.18	17154	15467	14541	12924	19919	16452	16759	13897	20950	18110	17654	15508	
2.63	3.48	1.30	17201	15470	14581	12926	19968	16471	16801	13912	21018	18125	17711	15520	
2.75	3.85	1.43	17226	15505	14603	12956	19988	16580	16817	14004	21056	18140	17744	15545	

** Based on ARI Rating Conditions of 70°F Entering Air Temp., 200°F Entering Water Temp and 180°F Leaving Water Temp. Max. Water Temperature 200°F. Max. Water Pressure - 200 Psig.

Hydronic Heat Kit Application Data						
Heating Capacity (Btuh) - Steam						
Steam (psig)	7000 & 9000 BTUH Units		12000 BTUH Units		15000 BTUH Units	
	Fan Speed		Fan Speed		Fan Speed	
	Hi	Low	Hi	Low	Hi	Low
2**	20,236	17,816	21,694	18,306	23,709	20,962
3	20,686	18,253	22,100	19,003	25,676	21,899
4	20,821	18,544	22,822	19,313	26,325	23,678

Maximum steam pressure 5 psig

**Based on ARI rating conditions of 70° F entering air temp. and 2 psig steam pressure

Water Valve Inlet/ Outlet Dimensions		
Model	Inlet	Outlet
VW2WNOA	5/16"	5/16"
VW3WNOA	5/16"	5/16"
VW2WNCA	5/16"	5/16"
VW3WNCA	5/16"	5/16"

Steam Valve Inlet/ Outlet Dimensions		
Model	Inlet (Inches)	Outlet (Inches)
VS2WNOA	5/16"	5/16"
VS2WNCA	5/16"	5/16"

Accessory Installations

Water Valve Pressure Drop

2-Way Valve	
Water GPM	Pressure Drop (psig)
1.00	0.19
1.13	0.24
1.25	0.30
1.38	0.36
1.50	0.43
1.63	0.50
1.75	0.58
1.88	0.66
2.00	0.76
2.13	0.85
2.25	0.96
2.38	1.07
2.50	1.18
2.63	1.30
2.75	1.43

CV=2.3

3-Way Valve Bypass	
Water GPM	Pressure Drop (psig)
1.00	0.13
1.13	0.16
1.25	0.20
1.38	0.24
1.50	0.29
1.63	0.34
1.75	0.39
1.88	0.45
2.00	0.51
2.13	0.58
2.25	0.65
2.38	0.72
2.50	0.80
2.63	0.88
2.75	0.96

CV=2.8

3-Way Valve	
Water GPM	Pressure Drop (psig)
1.00	0.04
1.13	0.05
1.25	0.06
1.38	0.08
1.50	0.09
1.63	0.11
1.75	0.12
1.88	0.14
2.00	0.16
2.13	0.18
2.25	0.20
2.38	0.23
2.50	0.25
2.63	0.28
2.75	0.30

CV=5.0

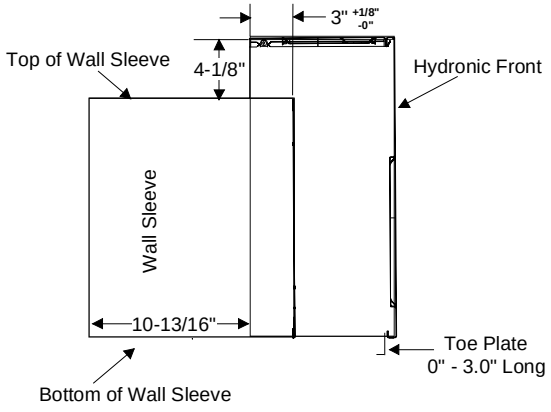
$$Q = CV\sqrt{Pd}$$

Q = Flow in Gallons/Min

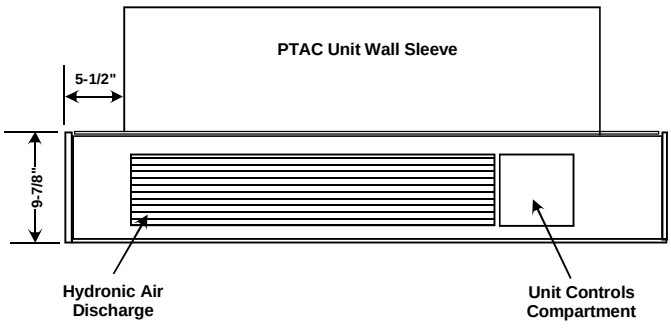
CV = Flow Coefficient of Valve

Pd = Pressure Drop (psig)

Dimensions of Complete Installation



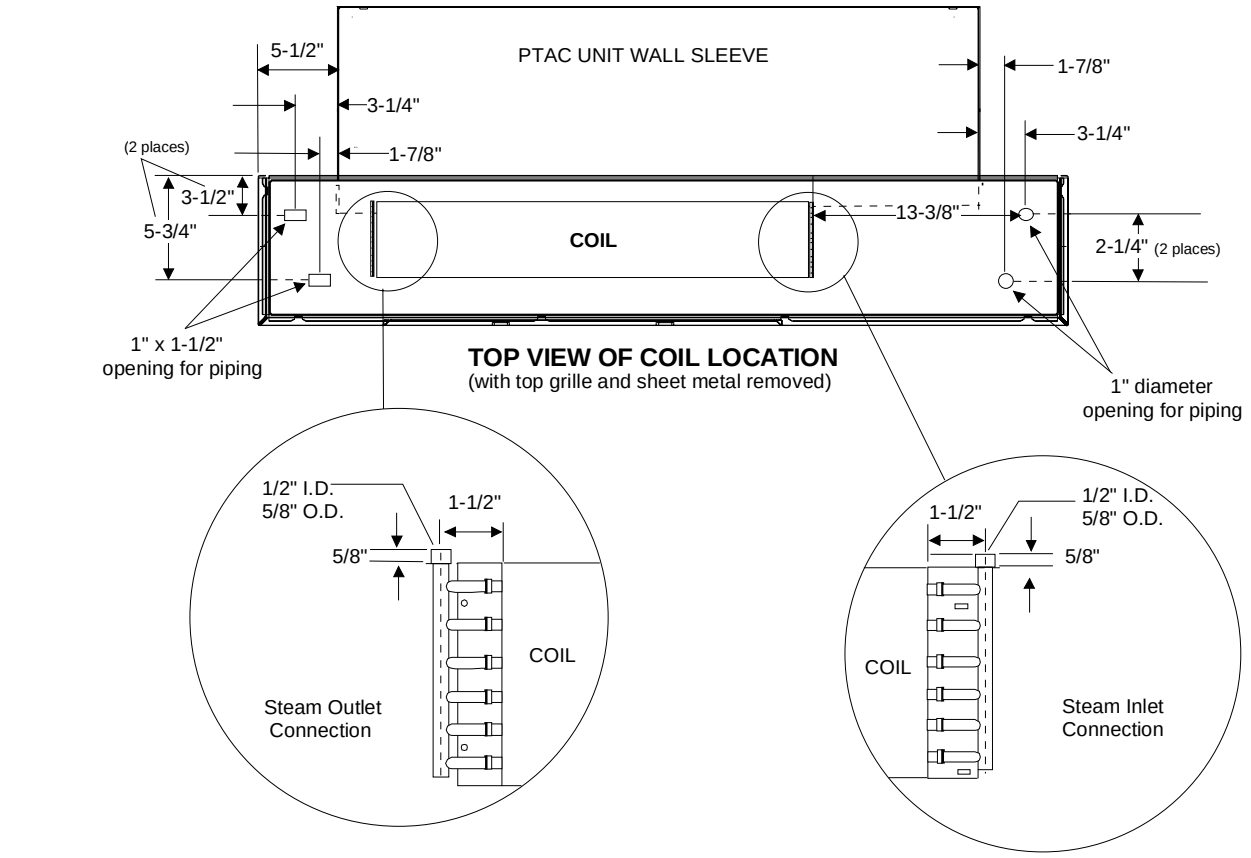
Side View



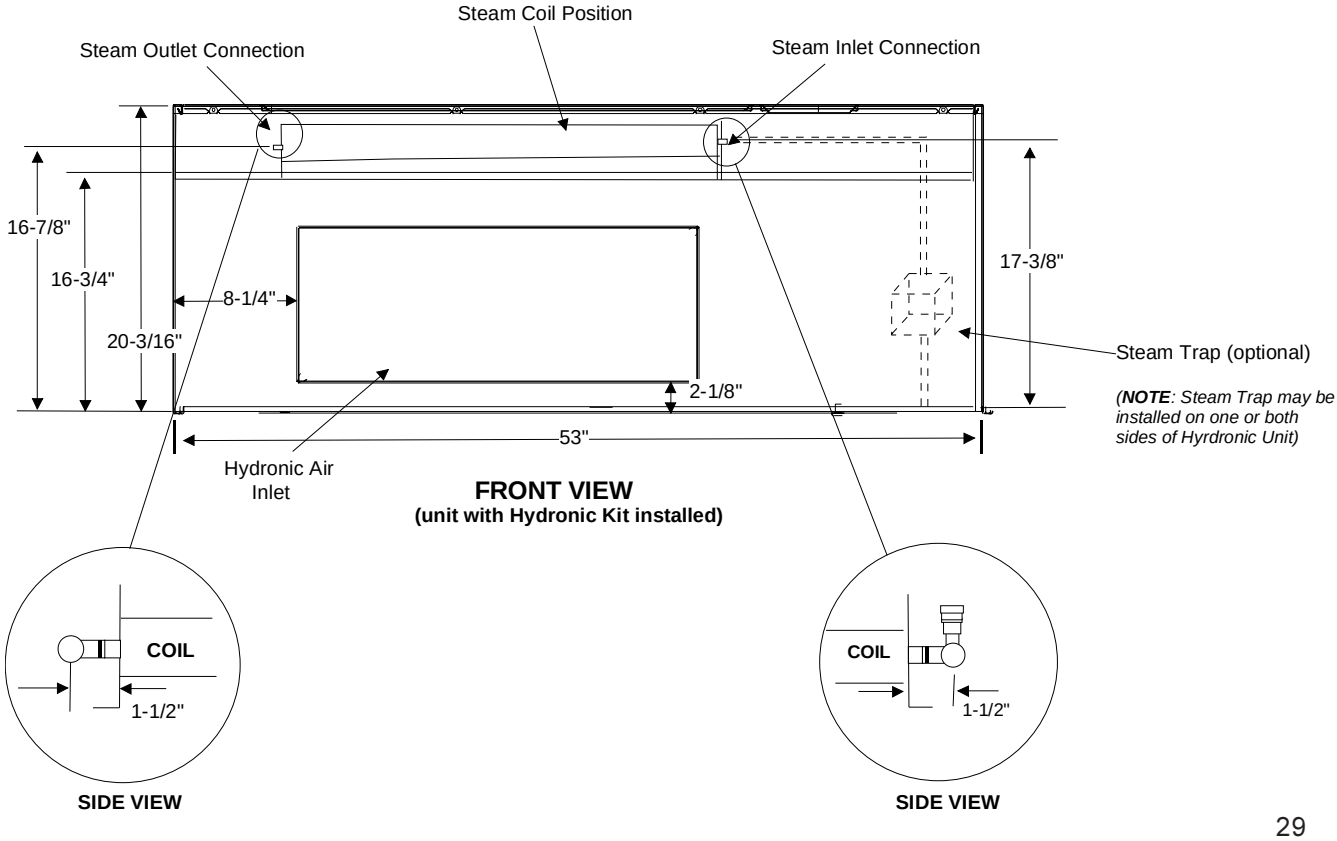
Top View

Accessory Installations

Steam Plumbing Dimensions



TOP VIEW OF COIL LOCATION
(with top grille and sheet metal removed)



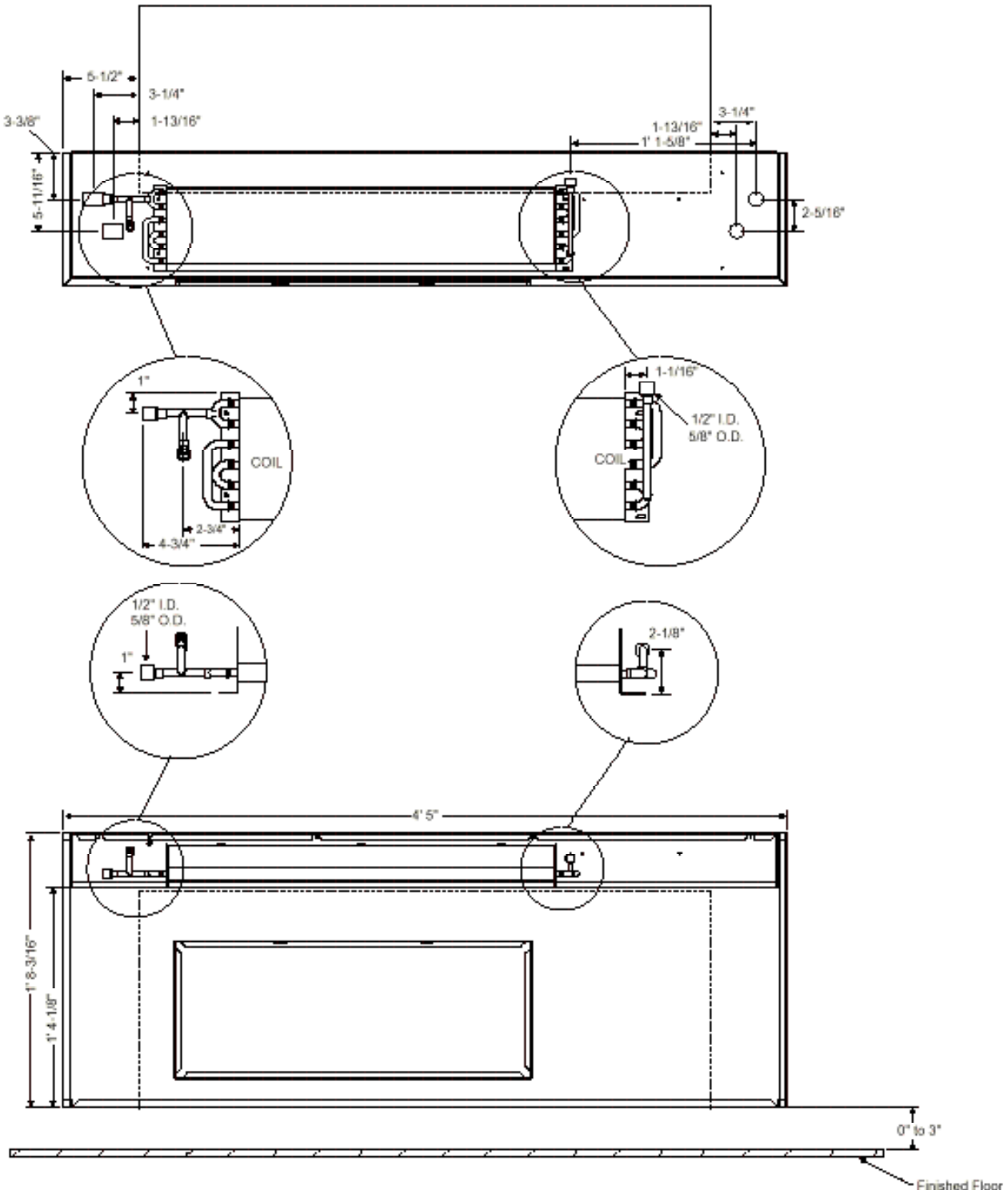
FRONT VIEW
(unit with Hydronic Kit installed)

*(**NOTE**: Steam Trap may be installed on one or both sides of Hyrdronic Unit)*

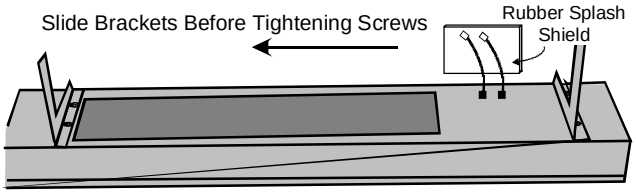
SIDE VIEW **SIDE VIEW**

Accessory Installations

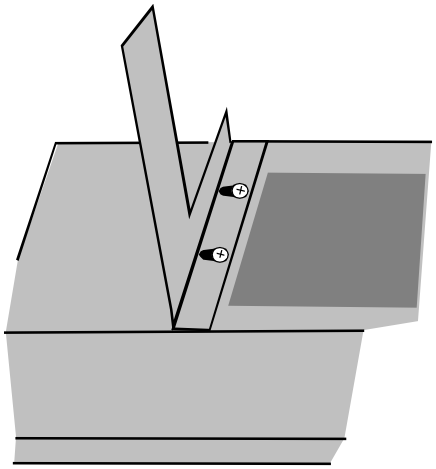
Hot Water Plumbing Dimensions



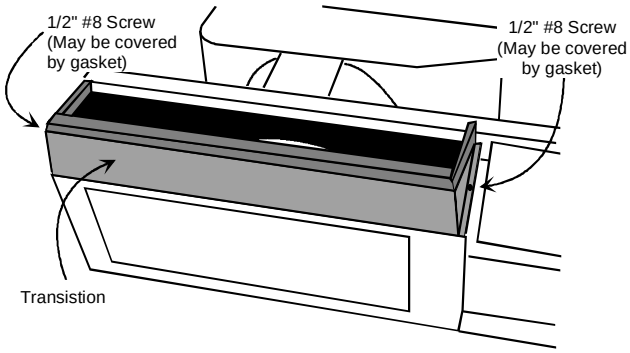
Accessory Installations



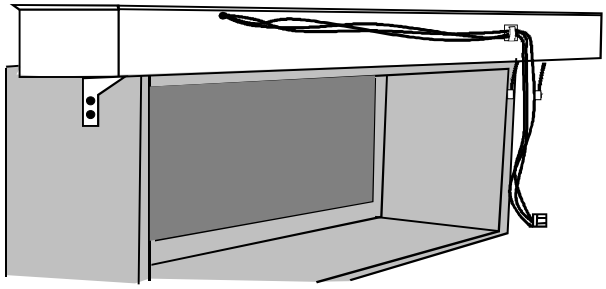
Move the brackets to the left so that screws are located in right side of slot and tighten screws.



5. Remove the control knobs and metal escutcheon from the control panel area of the chassis.
6. Remove the discharge screen from the chassis by removing the two screws holding the screen to the chassis.
7. Mount the transition to the chassis with supplied two 1/2-inch #8 screws.

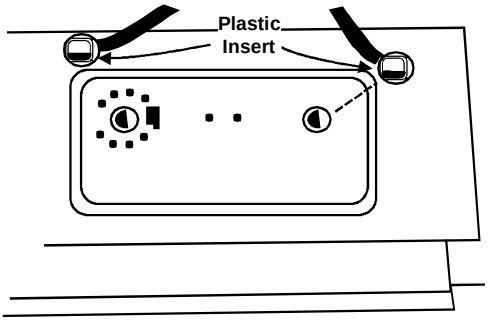


8. Position the hydronic top with support brackets to the wall sleeve and fasten the support brackets to the drilled holes in the wall sleeve with supplied four 1/2-inch #10 screws.

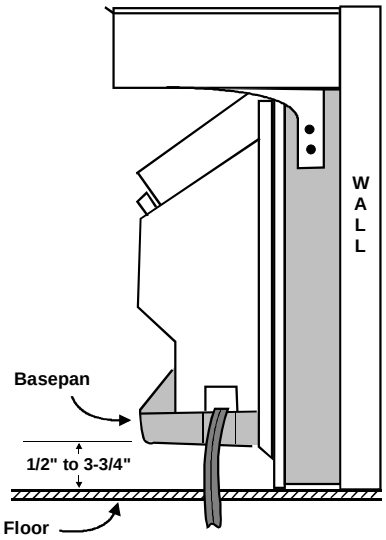


9. Place the chassis back into the wall sleeve and secure chassis to wall sleeve. Be careful not to bind or pinch the flexible shafts protruding from the bottom of the hydronic top assembly.
10. Place the ends of the flexible shafts protruding from the hydronic top over the corresponding D shafts on the chassis control board. Make sure the plastic inside the flexible shaft fitting is mating with the flat surface of the control board's D shaft.

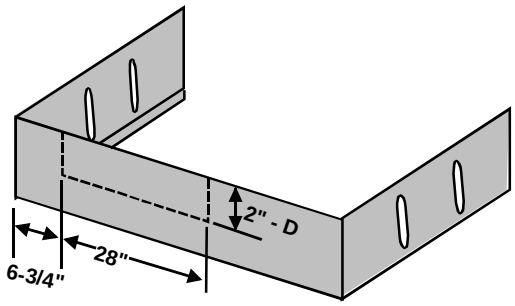
    NOTE: The splash guard must be pushed against the control panel.

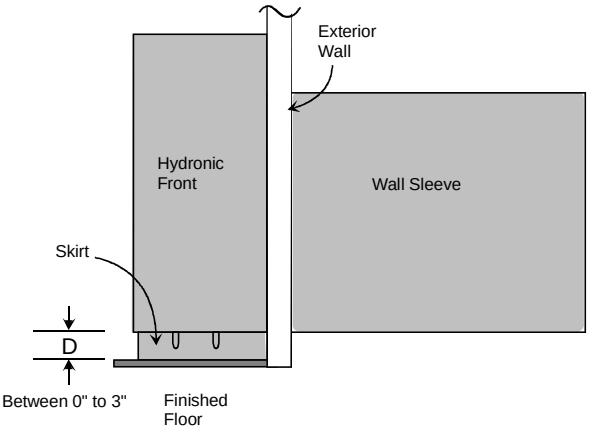


11. Measure the distance from the bottom of the chassis basepan to the finished floor to determine how far to extend the skirt below the metal front. If the distance is less than two inches the skirt must be trimmed so the skirt will not interfere with gasket or block inlet air on the front.



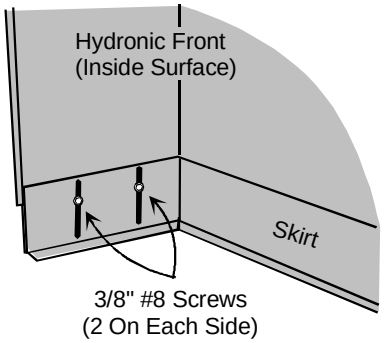
Accessory Installations



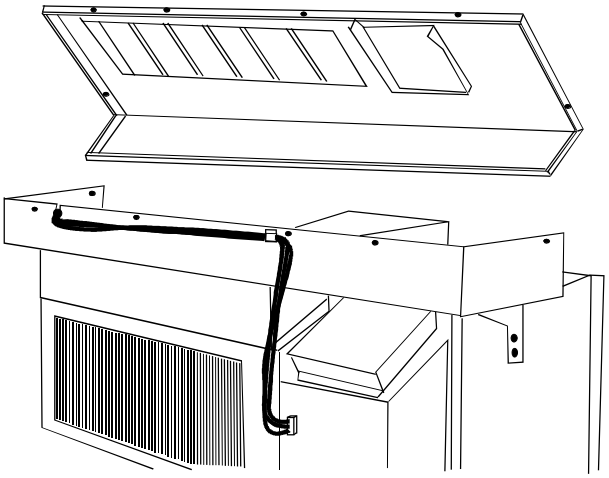


12. Mount the skirt to the metal front with four 3/8” #8 screws.

NOTE: Skirt is attached to front of top piece during shipping.

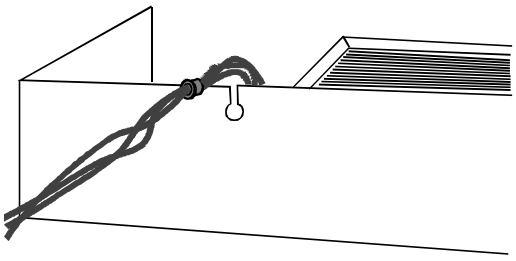


13. Remove the six screws from the top of the hydronic top. Lift the hydronic top straight up and set aside along with the six screws.

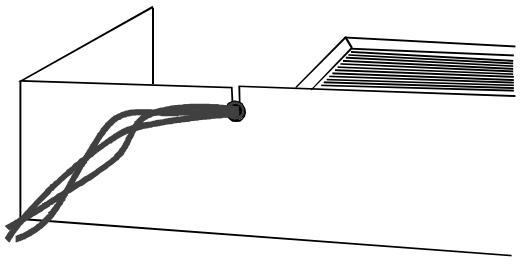


14. Position the wires from the freeze thermostat found on the left side of the hydronic top so the wires slide through the slot opening in the hydronic top.

    Place all wires into the supplied round plastic grommet through the slit in the grommet.



15. Snap the grommet into the hydronic top and pull the wires forward to take out the slack in the wires.



16. Route the freeze thermostat wires through the u-clip on the hydronic top assembly and down in front of the control panel. Snap the plastic male pin connector into the plastic female pin connector located on the outside front surface of the control panel.

17. Determine whether a 2-way or 3-way normally open or normally closed valve is required. Also determine if an end switch is required to control the circulating pump. Information relating to U.L. approved valves and current loads is shown on the label on the kit. In addition, water and steam valve model numbers are listed in the following table.

Accessory Installations

Water Valve			
Model	Description	Position	End Switch
VW2WNOA	2-Way	Normally Open	Yes
VW3WNOA	3-Way	Normally Open	Yes
VW2WNCA	2-Way	Normally Closed	Yes
VW3WNCA	3-Way	Normally Closed	Yes

Steam Valve			
Model	Description	Position	End Switch
VS2WNOA	2-Way	Normally Open	Yes
VS2WNCA	2-Way	Normally Closed	Yes

NOTE: WHEN HYDRONIC HEAT IS USED, DISREGARD THE MINIMUM CIRCUIT AMPACITY AND MAXIMUM FUSE SIZE SHOWN ON THE AUXILIARY NAMEPLATE FOR FIELD INSTALLED HEATERS. USE VALVES SHOWN ON THE MASTER UNIT NAMEPLATE.

CAUTION: VOLTAGE RATING OF VALVE IS 24VAC AND DOES NOT CORRESPOND TO VOLTAGE RATING ON THE UNIT NAMEPLATE.

THIS KIT MAY BE USED WITH ONE OF THE FOLLOWING ELECTRIC CONTROL VALVES:

	HOT WATER	STEAM
ERIE MANUFACTURING CO.	654C0507EA01	654C0407EA01
	654C0527EA01	654C0427EA01
	654C0509EA01	
	654C0529EA01	
BARBER-COLMAN	VA-1403-201	VA-9224-201
	VA-1403-301	VA-9214-201
	VA-3403-201	
HONEYWELL	V8043A	
	V8043B	V8043J
	V8044A	

NOTE: WHEN HYDRONIC HEAT KIT IS EMPLOYED, THE FOLLOWING LOADS OPERATE CONCURRENTLY:

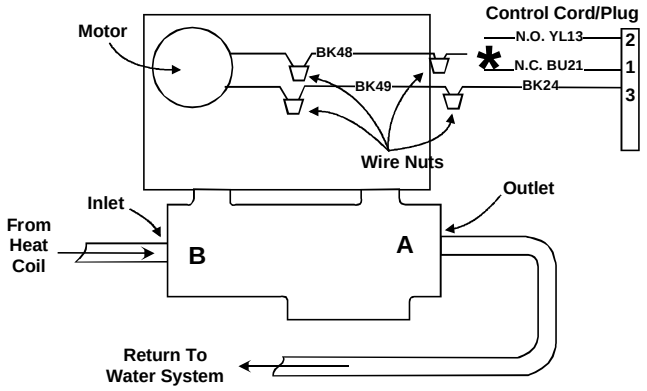
UNIT VOLTAGE RATING	230/208	265
FAN MOTOR AMPS	.6	.6
MOTORIZED VALVE, WATTS	6.5	6.5
MAX. WATER TEMPERATURE	200° F	
MAX. WATER PRESSURE	200 PSIG	
MAX. STEAM PRESSURE	5.0 PSIG	

18. Remove the valve cover and connect the supplied valve wire harness leads to the two leads for the valve motor (not the end switch leads) with the supplied wire nuts. The fiber washer and strain relief supplied with the valve harness must be located in the valve motor enclosure after assembly.

19. Replace the valve cover. Use the two remaining wire nuts to connect the wires from the chassis wire harness to the flow valve harness. The BK24 wire from the chassis harness connects to the BK49 wire of the valve harness. For *normally open* valves, connect the YL13 wire from the chassis harness to the BK48 wire of the valve harness. For *normally closed* valves connect the BU21 wire from the chassis harness to the BK48 wire of the valve harness. Cut either the YL13 or BU21 wire that is not being used at the plastic male connector on the control panel.

    Two-Way Valve Installation

    When installing two-way valves, the flow direction is from end “B” as shown below.



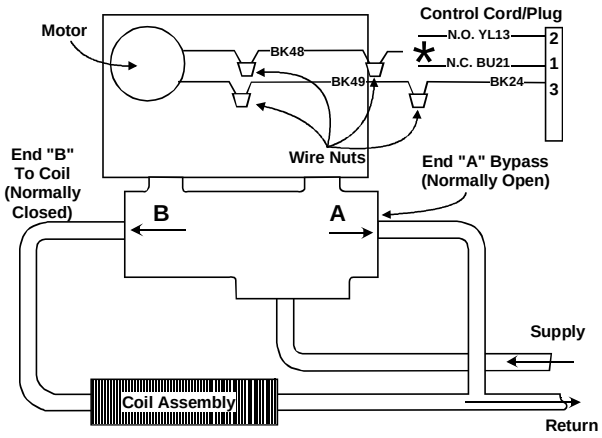
*** Connect YL13 for Normally Open Valves.**

Connect BU21 for Normally Closed Valves

20. Before soldering pipes to normally closed valves, manually open valve by slowly moving lever to retaining notch and allow spring to secure lever in notch. The lever will reset to the automatic position the first time the valve is energized.

    Three-Way Valve Installation

    When installing three-way diverting valves, end “B” is the supply to coil and end “A” is the by-pass end. The inlet port is unmarked. Port markings “A” and “B” are located on the bottom of the valve body.



*** Connect YL13 for Normally Open Valves.**

Connect BU21 for Normally Closed Valves.

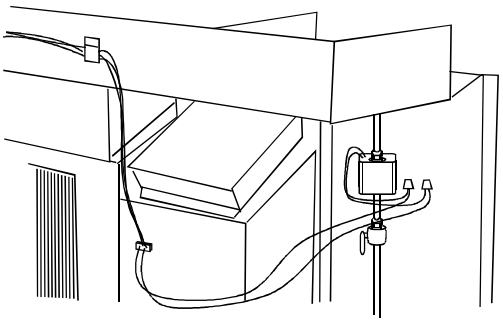
Prior to soldering the normally closed 3-way valve, open both ports by slowly moving manual operating lever to retaining notch until lever is secured by valve spring.

Flow valve and tubing is to be installed so that it does not restrict removal of the chassis from the sleeve for service.

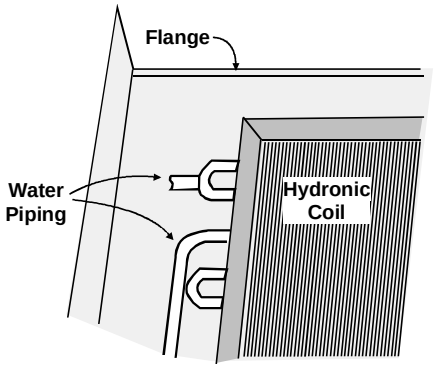
21. Solder the flow valve and other necessary components in line with the plumbing rising from the floor or wall. The components should not be placed inside the hy-

Accessory Installations

dronic top assembly.

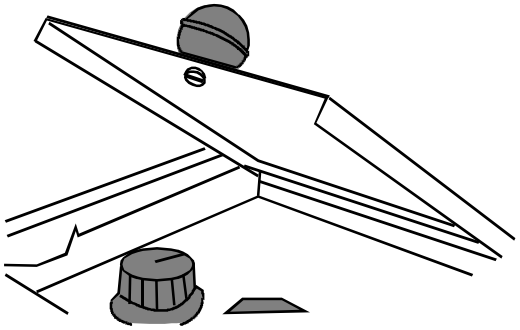


22. The plumbing may enter from the left and/or right side of the unit through the slots and holes that are supplied in the hydronic top assembly. (See Plumbing Dimensions)
23. Hydronic water kits (HWK03) may have water entering either the left or right side of the coil. Hydronic steam kits (HVK03) can only have entering steam on the right side of the coil. (See Plumbing Dimensions)
24. Make sure all piping is plumbed to the coil and system has been bled of air. Using the existing six screws and hydronic top from Step 13, place the top cover over the coil deck assembly. Make sure the back flange of the top cover fits inside the small vertical flange in the back of the coil assembly.



NOTE: A manual bleed valve is supplied with both the Hydronic Water Kit and the Hydronic Steam Kit (HWK03 and HVK03). It is recommended that the installer install an automatic bleed valve for Hydronic Steam Kits (HVK03) to eliminate frequent access to the manual bleed valve for purging air from the steam system.

25. Place the hydronic front on the top assembly so the flanges of the front fit tightly into the flanges of the top assembly.
26. Check to ensure the inlet air filter is located inside of the inlet grille between the inlet grille and the coil. The inlet grille can be hinged open by unlatching the two top levers on the grille.
27. Attach the supplied ball knob to the control door using the #10 machine screw supplied with the kit.



28. To service the unit, remove the front. Remove the four sheet metal screws that secure the unit to the wall sleeve from each of the side seal mounting brackets. If a subbase is used, remove the right side cover panel from the subbase and disconnect the power cord. The chassis may be removed for service.

NOTE: To prevent water hammering, the use of approved motorized valves and good piping practices is strongly recommended. Opening and closing motorized valves very slowly will help prevent water hammering.

Accessory Installations

Hydronic Transformer

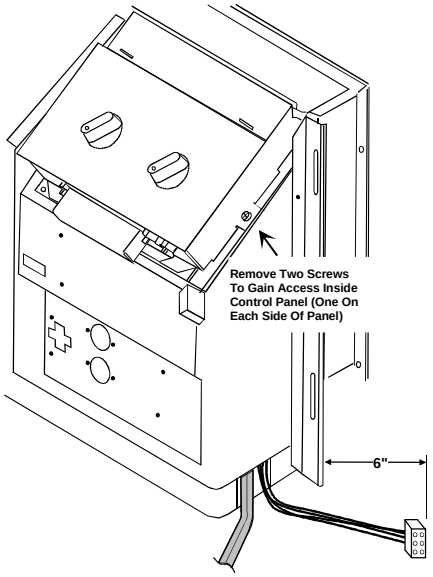
Description

The hydronic transformer kit must be installed into a standdard PTAC chassis to make the chassis operate electrically with the HWK03 and HVK03 hydronic kits. This kit is not required on hydronic chassis (model number ending with "HA"). Do not use this kit with heat pump chassis - consult your Amana sales representative for information.

WARNING

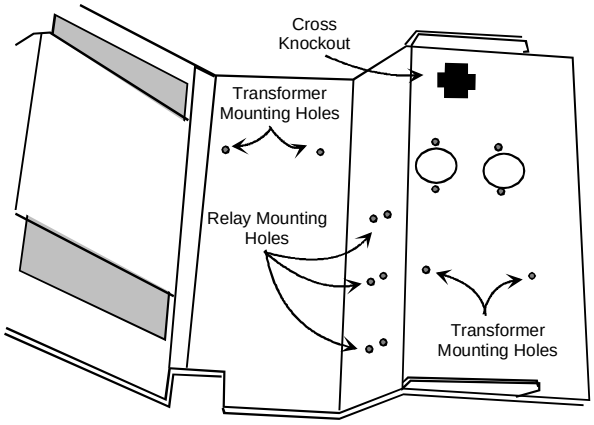
Disconnect power source before installing this kit.

1. Remove front by rotating bottom outward and then lifting up and out from chassis.
2. To gain access inside the control panel, after removing the knobs and escutcheon, remove the two screws holding panel in position. Tilt control panel forward, being careful not to pinch any wires.



3. Lift the control panel up so the control panel is free of its hinges. Orient the control panel so there is easy access for mounting components to the control panel.
4. Using the two #8 screws that are provided, screw the transformer to the control panel in the transformer mounting holes provided in the panel.
5. Mount the relay in one of the three pairs of relay mounting holes in the control panel making sure that the threaded stud is in the smaller hole and the metal tab is in the larger hole. Screw the provided nut onto the threaded stud from the opposite side of the control panel.

Accessory Installations



6. Remove the cross shaped knockout from the control panel. Insert the female wire connector into the cross shaped hole from the side of the control panel where the transformer and relay are mounted.

NOTE: If the cross knockout is not located in the control panel, disconnect the terminals of the wire harness from the relay and transformer. Route the wires through the power cord opening in the basepan until about 6 to 8 inches of the harness protrudes from the opening. Reconnect the harness wire terminals to the relay and transformer as follows:

Wire YL12 to Relay 1 terminal

Wires BU20, BU22 to Relay 3 terminal

Wire RD20 to Relay 5 terminal

Wire BK25 to one Transformer 24V terminal

Wire BK23 to other Transformer 24V terminal

7. (1) **If the unit has an electric heater**, remove the BR34 and BR35 heater wires from the control board and push these wires through the mid partition panel so that the wires will not be loose in the control panel area.

   (2) **If the unit has a 2 stage electric heater**, disconnect the BR34, BR35, VT20, VT19, VT17, and VT18 heater wires from the control board. Remove the heater relay and wires from chassis and discard . Push the heater wires (BR34, BR35, and BR36) through the mid partition panel so the wires will not be loose in the control panel area.

8. Connect the PK30 and PK31 wires from the relay to the heater terminal next to the Line 1 terminal and to the heater terminal next to the Line 2 terminal respectively, on the control board.

9. (1) Remove the RD33 and Line 2 power cord (BK18 for 265 volt units) wires from the control board. Connect the GY21 and GY22 wires from the transformer to the Line 1 and Line 2 terminals, respectively. On the control board, reconnect the RD 33 and Line 2 power cord (BK18 for 265 volt units) wires to the piggy back terminals of the GY21 and GY22 wires on the control board, respectively.

   (2) **If the unit already has a power vent or power door kit installed in the chassis**, remove the WH7 wire from the Line 1 terminal on the control board and connect the WH7 wire to the GY21 wire at the transformer.

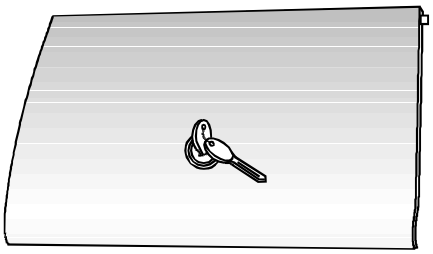
10. Install the control panel back onto its hinges. Close the control panel being careful not to pinch any wires. Reinstall the control panel cover and screw control panel back into place.

11. See hydronic installation instructions to finish installing hydronic heat kit.

Accessory Installations

Keylock

Description
The Key Lock kit prevents tampering of the controls used to set temperatures and heating or cooling functions.



Key Lock Kit

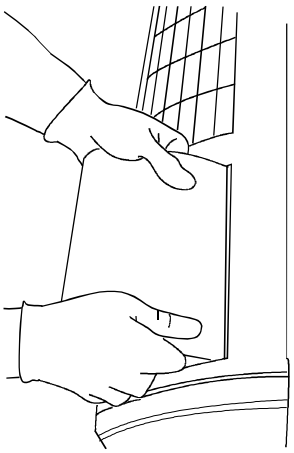
CAUTION

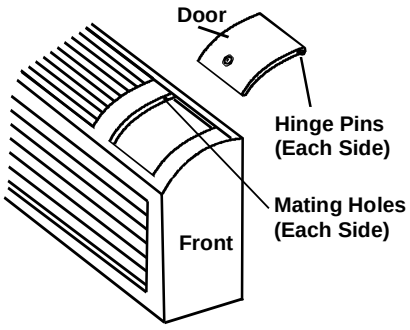
PERSONAL RISK HAZARD

Underwriter's Laboratories Inc. listed. For institutional use only where supervisory monitoring is available. Any other use may increase the risk of personal injury or property damage.

Installation
The installation and servicing of the equipment referred to in this booklet must be performed by a qualified, experienced technician.

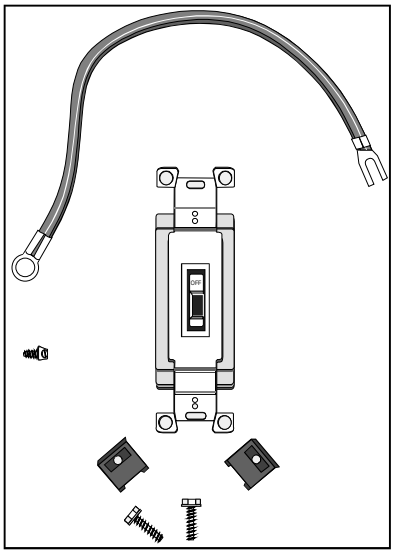
1. Remove front from unit by pulling bottom out and then lifting upward.
2. Remove existing door assembly by lifting door halfway and, using both hands, bow door just enough for door hinge pins to slide out of mating holes.
3. Install the new door assembly with the key lock by bowing the door with both hands and aligning the door hinge pins with their mating holes in the front.
4. For further security, secure the front cover to the chassis with two 1/2 inch #8 sheet metal screws (see chassis installation).





Accessory Installations

Power Disconnect Switch



Power Switch Kit Components
(Cover Plate Not Shown)

Description

230/208 and 265 Volt Power Switch Assemblies
An optional 230/208V or 265V power switch assembly kit can be installed in a full-length subbase or in the junction box of the Hard Wire Junction Box kit. The switch provides a POWER ON/OFF function as required by some electrical codes. A replacement junction box cover plate is provided with each switch.

⚠ WARNING

Disconnect electrical power source before wiring the subbase. Failure to do so may result in injury or death from electrical shock. The unit "OFF" switch does not disconnect all power to the unit.

⚠ WARNING

To avoid the possibility of property damage, personal injury, or death, installer must use proper polarization. See specific instruction.

⚠ CAUTION

Use copper conductors only for electrical connections. The use of other types of conductors may result in galvanic corrosion, overheating and resultant equipment failure.

⚠ CAUTION

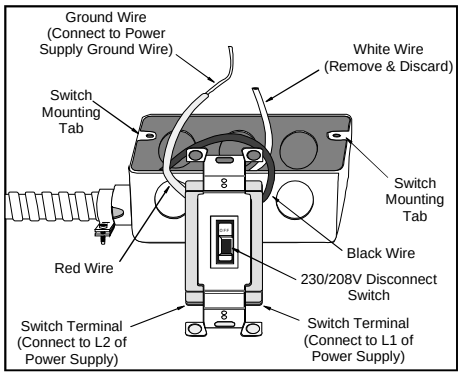
All wiring must comply with applicable local and national codes. Type and location of fused disconnect switch(es) must comply with all applicable codes.

Power Switch Installation forJunction Box

NOTE: Refer to Hard Wire Assembly Kit Instructions for mounting junction box. If the junction box is mounted vertically, the switch must be installed so that the ON position is up.

230/208V Installation

1. Remove and discard the white lead of the hard wire assembly.
2. Connect the black lead of the hardwire assembly to one terminal of the disconnect.



3. Connect the red lead of the hardwire assembly to the switch terminal opposite the terminal where the black lead was assembled in step 2.
4. Remove the knockout from the desired power entry point on the junction box and route field supplied power wires into the junction box.
5. Connect the red and black leads of the field power supply to the two unused terminals on the power switch.
6. Connect the ground wire of the field power supply to the bare ground wire assembl.

Accessory Installations

7. Mount the switch on the tabs in the junction box and install the switch cover plate provided with the power switch kit.

265V Installation

1. Remove and discard the red lead of the wire assembly
2. Connect the black lead of the hard wire assembly to one terminal of the disconnect.
3. Remove the knockout from the desired power entry point on the junction box and run field supplied power wires into the junction box.
4. Connect the black lead of the power supply to the remaining disconnect switch terminal.
5. Connect the ground wire of the field power supply to the bare ground wire assembly.
6. Connect the white lead of the wire assembly to the Neutral lead of the power supply.
7. Mount the switch on the tabs in the junction box and install the switch cover plate provided with the power switch.

Power Switch Installation for Subbase

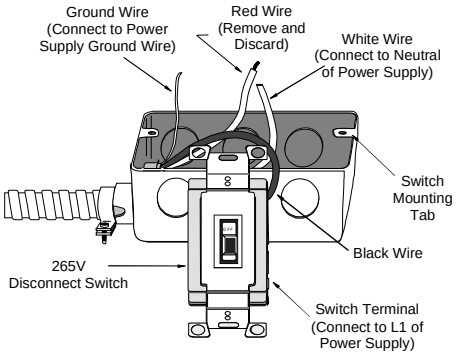
1. Remove the left and right subbase cover panels by removing screws holding them in place. Retain the screws.
2. Remove the rectangular knockout located in the center of the recessed area on left cover panel.
3. Install the switch using the two bolts and nuts provided so that the “ON” position of the switch is on the right. Install ground lead (provided) between switch mounting tab and mounting plate.

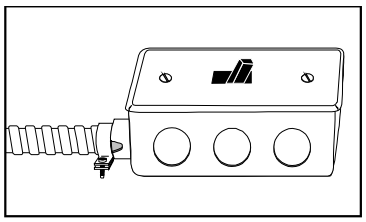
230/208V Wiring Procedure

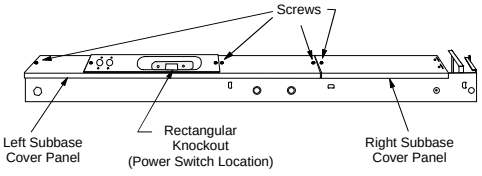
4. Route the RED wire from the receptacle through the barrier in the subbase using the hole provided.
5. Insert the RED wire from the receptacle into the upper right hole in the rear of the switch and tighten the screw.
6. Route the BLACK wire from the receptacle through the barrier in the subbase using the hole provided.
7. Insert the BLACK wire from the receptacle into the lower right hole in the rear of the switch and tighten the screw. Insert the BLACK power wire (field wiring) into the lower left hole in the switch and tighten the screw.
8. Attach the ground field wire by connecting the green wire on the disconnect to the ground terminal (screw) on the back wall of the subbase high voltage section.
9. Replace the cover panels (with the switch installed) to the subbase using the screws removed in step 1.

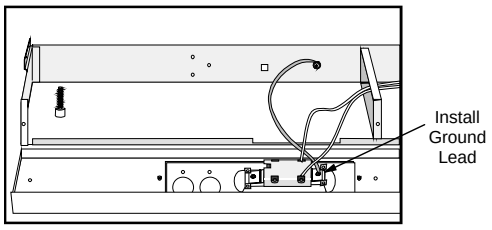
265V Wiring Procedure

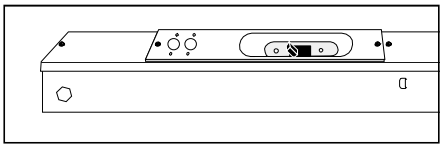
4. Insert the BLACK wire from the receptacle into the lower right hole in the rear of the switch and tighten the screw. Insert the BLACK power wire (field wiring) into the lower left hole in the switch and tighten the screw.
5. Connect the WHITE wire from the receptacle to the WHITE power wire (field wiring) with the wire nut provided.
6. Attach the ground field wire by connecting the green wire on the disconnect to the ground terminal screw on the back wall of the subbase high voltage section.
7. Replace the cover panels (with the switch installed) on the subbase using the screws removed in step 1.











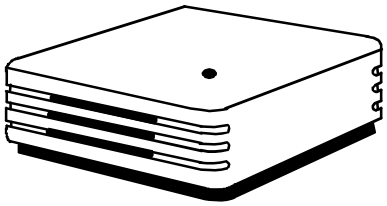
Accessory Installations

Remote Temperature Sensor

The installation and servicing of the equipment referred to in these instructions must be performed by qualified, experienced technicians.

Description

With control functions remaining at the unit, the remote temperature sensing feature is a unique accessory capable of providing accurate sensing of room temperature from a central location, separate from the unit.



Remote Temperature Sensor

Locating the Temperature Sensor

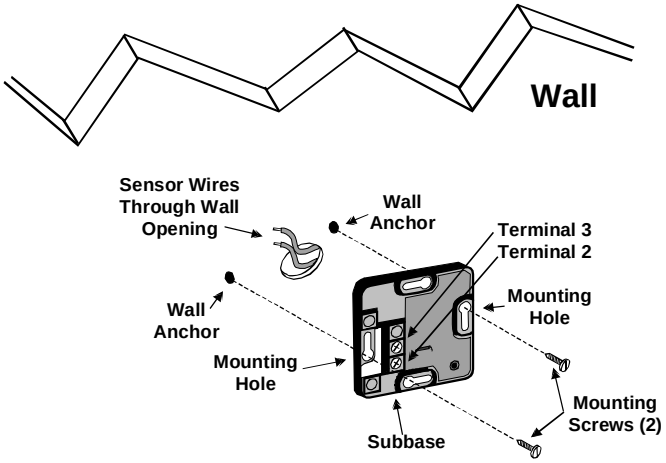
For best performance results, the remote temperature sensor should be located approximately 5 feet above the floor on an inside wall in an area with good air circulation. The sensor should be mounted so that it is sensing the temperature of the room where the occupants will be spending most of their time.

Do not install the sensor where it may be affected by the following:

- Dead spots behind doors, in corners or under cabinets
- Hot or cold drafts from air ducts
- Radiant heat from the sun, appliances, or fireplaces
- Concealed pipes and chimneys
- Surfaces affected by a cold or heat source on side opposite the sensor.

Mounting Sensor

Loosen the screw in the lower right corner of the cover and pull the decorative cover off the sensor base. Position the sensor base on the wall, in the desired location, and mark two mounting holes as shown. Pull the two sensor wires (shielded, twisted pair wiring not required) through the opening in the sensor base and secure the sensor base to the wall using wall anchors, if required. Obtain the wall anchors locally. Be careful not to let the wires fall into the wall opening.



Sensor Base Mounting

Installation

WARNING

To prevent death, personal injury or property damage due to electrical shock, do not run any thermostat wiring in a conduit with electrical power wiring.

1. Remove the PTAC cabinet front to expose the control panel area.

IMPORTANT NOTE: Disconnect power to the unit and/or turn the Master Switch on the control board to OFF when connecting or altering wiring to any terminal - failure to do so may result in shorting the fuse or damaging the control board.

2. Remove the terminal strip cover by removing the screw securing it to the control panel cover.
3. Set the Remote/Standard switch to the STANDARD position.
4. Connect the two sensor wires running from the RC and RS terminals on the PTAC Remote Thermostat termi-

Accessory Installations

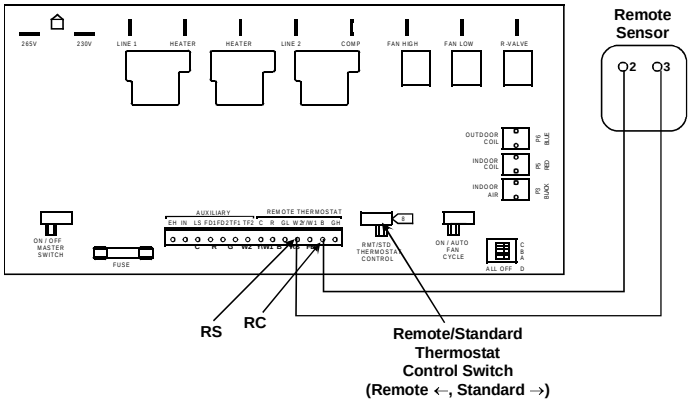
nal strip to terminals 2 and 3 on the remote temperature sensor base as shown.

5. Wire the sensor using standard 20 gage thermostat wire (shielded, twisted pair wiring not required) with a maximum wire length of 50 ft.

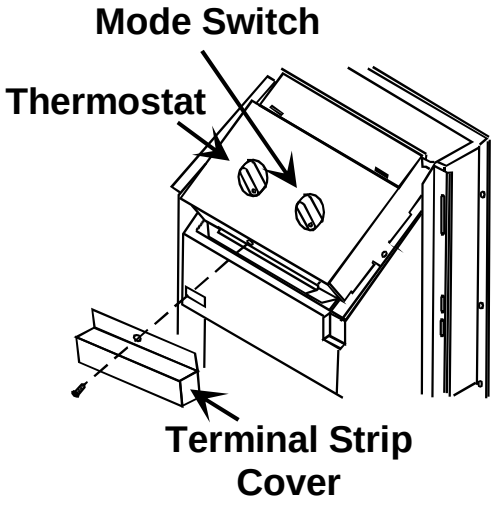
   NOTE: Shorting the thermostat wires to ground will cause control board failure.

6. Replace the terminal strip cover and reinstall the cabinet front.

7. When power is reestablished to the unit, the remote temperature sensor will automatically be activated. The mode switch must be in the OFF position before electrical power is applied to the unit. If the mode switch is not in the OFF position when electrical power is applied to the unit, the random restart feature will activate causing a two to four minute start-up delay.



Wiring Schematic for Remote Temperature Sensor



Control Panel

Accessory Installations

Subbase

Description

The subbase may be installed on the wall sleeve before or after installing the wall sleeve. The subbase is prewired. Electrical connections can be made on the left side after the access cover is removed. A grounding screw is provided.

NOTE: The wall sleeve must be installed a minimum of 3¼ inches or maximum of 5 inches above a finished floor and a minimum of 2¾ inches from a finished wall.

⚠ WARNING

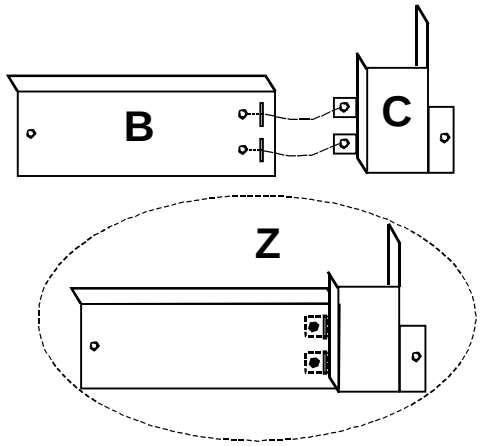
PERSONAL RISK HAZARD

To avoid the risk of death, personal injury or property damage due to electrical shock, disconnect electrical power before electrically connecting any equipment or changing any existing wiring.

IMPORTANT NOTE: To avoid equipment damage, use copper conductors only.

NOTE: The installation and servicing of this equipment must be performed by qualified, experienced technicians only.

1. Remove parts B and C from the subbase and join together using two metal screws provided. This assembly now becomes the right front cover (Part Z) of the subbase.



2. Position subbase under the front of the wall sleeve.
3. Align the back edge of the flange on cover A to front of the wall sleeve flange.

   NOTE: A propely ihnstalled subbase will extend 1-1/2 inches to the front of the wall sleeve. Do not mount flush to the front of the wall sleeve.
4. Drill four ⅛ inch holes in wall sleeve to line up with holes in subbase. Mount subbase to wall sleeve with four sheet metal screws provided with kit.
5. Remove the left front cover from the subbase.
6. Position skirting on each side of wall sleeve to prevent the entry of foreign materials. Trim skirting to desired length. Attach skirting with four sheet metal screws provided with kit.
7. Wire subbase for appropriate voltage. **NOTE:** The proper subbase must be ordered to obtain the correct electrical receptacle.
8. After wiring is complete, mount covers A and Z to the subbase with provided screws.
9. When installing optional accessories to the subbase, refer to each installation instruction for that accessory.

Accessory Installations

Part/Location Identification

A Left Front Cover

B Right Front Panel

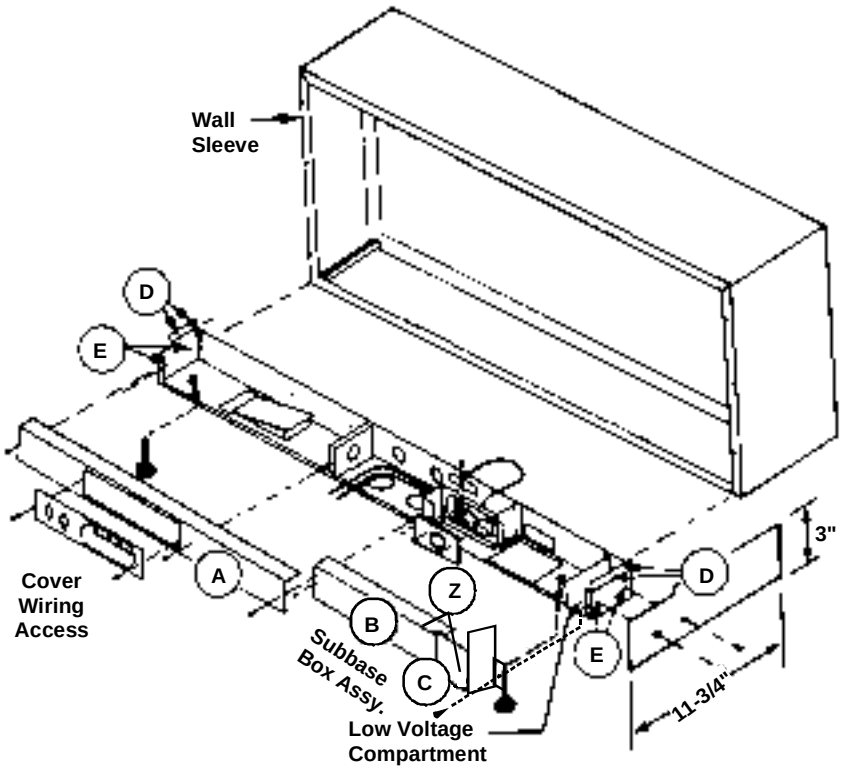
C Front Cord Panel

D Wall Sleeve Hole Location

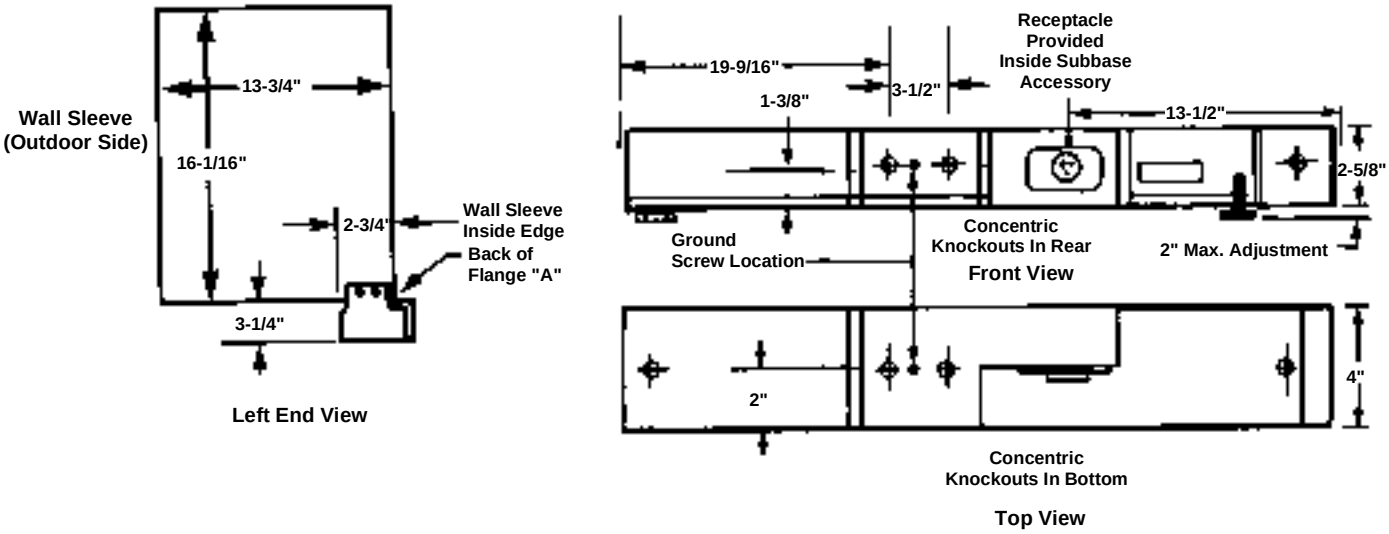
E Skirting Hole Location

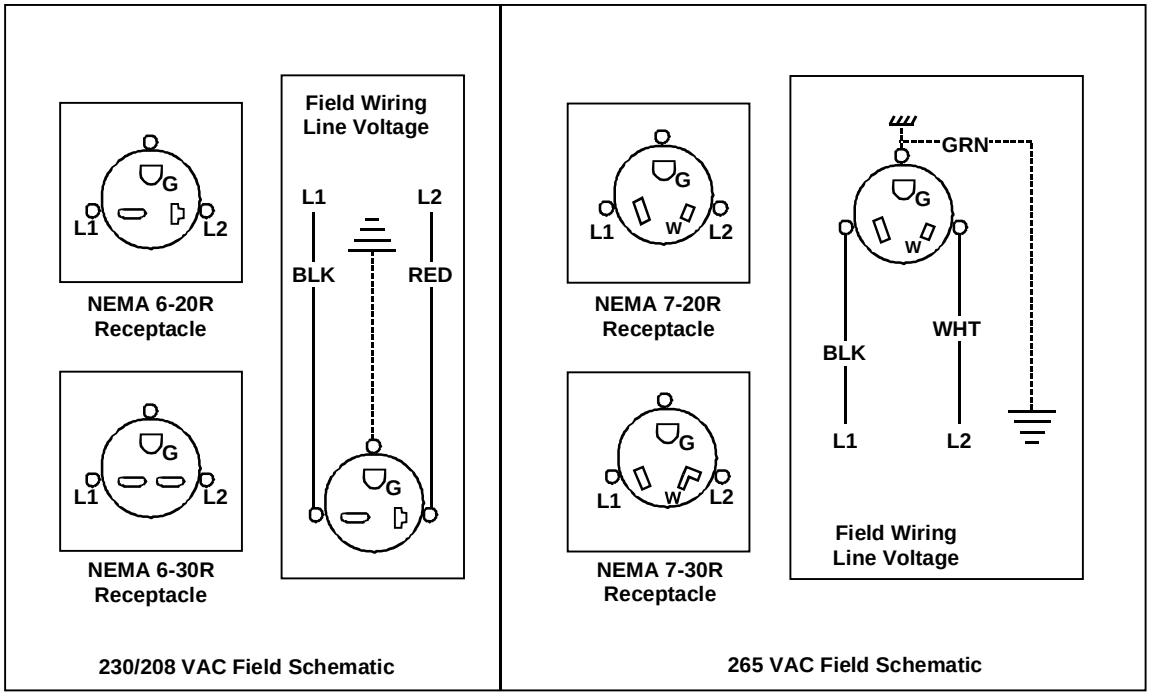
Z Right Front Cover Assembly

-- Leveling Legs (Not Shown)



Accessory Installations





Wiring Diagram

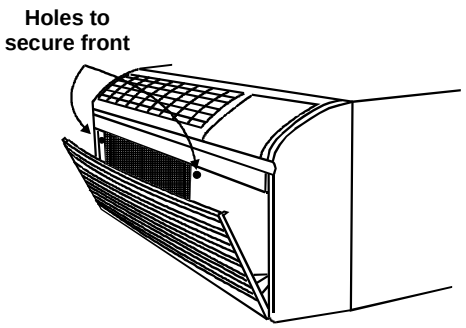
Accessory Installations

Remote Thermostat High Fan Kit

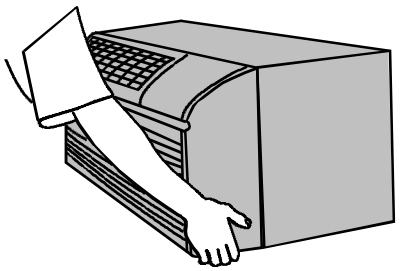
Description

When a wall mounted thermostat is used, the PTAC unit will operate in low speed only. Following these instructions will allow the PTAC unit to operate on high speed only. This kit contains twenty labels, enough for ten units.

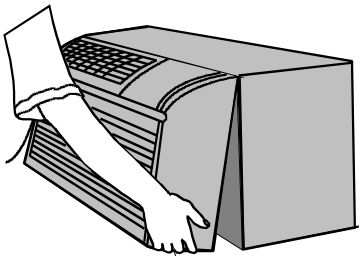
1. Remove the two screws securing the front to the chassis. **NOTE:** Not all installations will use these screws.



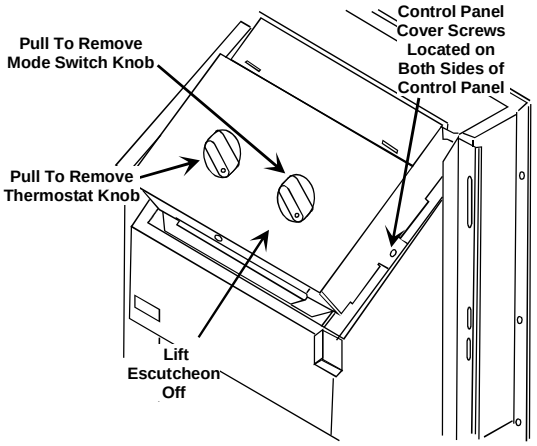
2. Grasp the cabinet front as shown.



3. Pull the bottom of the cabinet front away from the chassis until the retaining clips disengage.



4. Lift the cabinet front off the chassis.
5. Remove the unit control knobs by pulling the knobs off the control shafts.

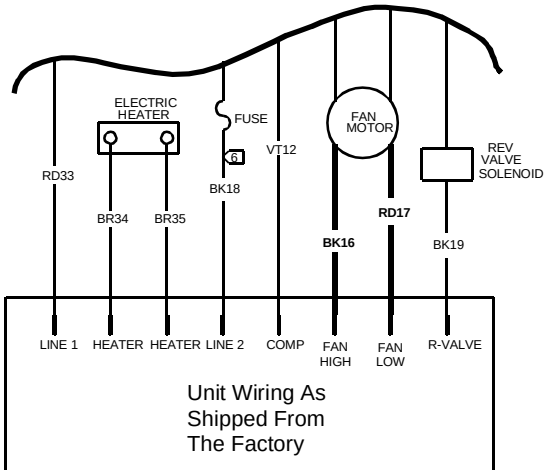


6. Lifting the front edge of the escutcheon, slide the tabs at the top of the escutcheon out of the retaining holes and remove the escutcheon.
7. Remove the control panel cover by removing the two screws holding the control panel cover in place. Tilt the control panel forward to gain access to the wiring.

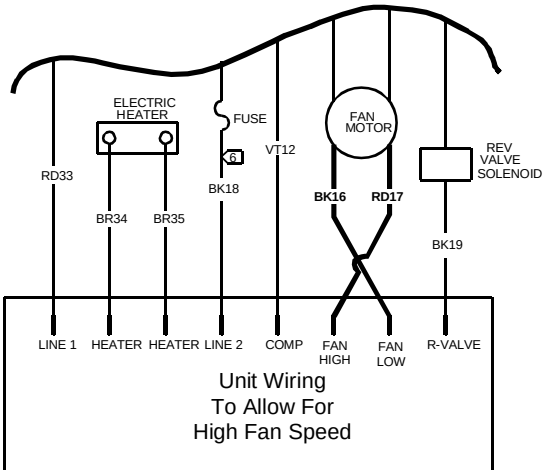
IMPORTANT NOTE: Disconnect power to the unit and/or turn the Master Switch on the control board to OFF when connecting or altering wiring to any terminal - failure to do so may result in shorting the fuse or damaging the control board.

8. On the control board switch BK16 along with all other wires on the “FAN HIGH” and RD17 and all other wires on the “FAN LOW” 1/4 inch terminals.

Accessory Installations



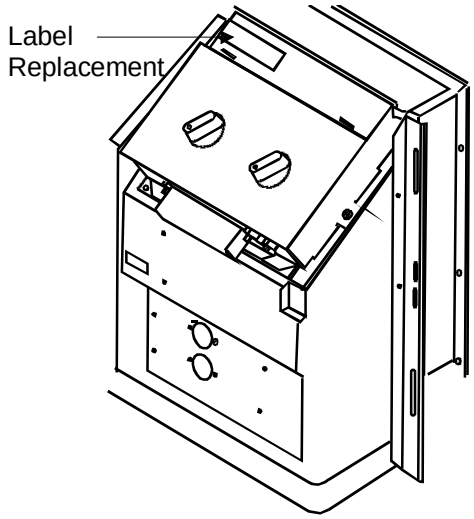
Unit Wiring As Shipped From The Factory



Unit Wiring To Allow For High Fan Speed

NOTE: If additional accessories have been added, the wiring may differ from what is shown.

9. Replace control panel cover, escutcheon, and control knobs.
10. Place one label supplied with this kit on the wiring diagram supplied with the unit.
11. Place a second label on the sheet metal control cover near the top left edge.



12. Replace the wiring diagram and the front cover.

Accessory Installations

Right Hand Subbase Conversion

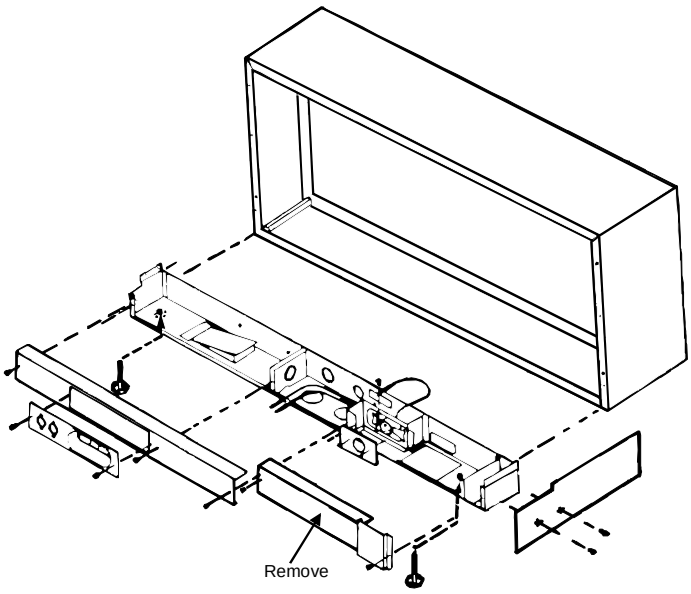
Description

The right hand subbase cover is used when existing subbases are already installed on the wallsleeve and the subbase needs to be converted to a upgraded subbase. The Right Hand Subbase Cover kit must be installed in order to maintain proper clearances from the subbase to all PTAC chassis manufactured after January 1, 1996.

NOTE: The right-hand subbase cover can only be used on subbases manufactured prior to January 1, 1996 model subbases.

Installation

1. Remove the right hand subbase cover from the existing subbase by removing the two screws holding the cover in place. Save these screws for later use.



2. Unplug and remove the old PTAC chassis from the wall sleeve.
3. Install the new PTAC chassis into the wallsleeve and plug the PTAC power cord into the subbase power receptacle.
4. Place the right hand subbase cover supplied with this kit on the subbase in the same location that the old right hand cover was removed. Secure the right hand subbase cover to the subbase using the screws removed in Step 1.